

EXHIBIT M

Office: (520) 568-2239
 Fax: 568-2185
 Emergency No. (520) 251-1896

MARICOPA DOMESTIC WATER IMPROVEMENT DISTRICT

44801 W. Honeycutt Rd.
 P.O. Box 269
 Maricopa, AZ 85239-0269

MINUTES OF THE REGULAR BOARD MEETING November 19, 2014

I:

- A. Call meeting to order at 5:30 pm
- B. Roll call: Don Pearce & Joe Hoover present. Confirmation of Quorum
- C. Minutes: Joe motioned to accept the minutes from 10/15/14 Regular meeting, Don 2nd, all in favor; motion carried.

II: BUSINESS BEFORE THE BOARD

1. Call to Public: Melvin Benning and Grace Gomez attending. Mr. Benning was there to observe and was a previous member of the Rotary Club. Grace Gomez had submitted an application for the open Board position to replace Sean Lafitte. Leon Potter from the Maricopa Rotary Club arrived during item #12.
2. Financial Report: Sara Sheehan submitted the Balance sheet for Board review. She said they will go into the HRA info in item #8 for further review and changes.
3. Discuss/Approve/Deny Interim Board Applications: The Board reviewed Grace Gomez's application. She said she has an issue with her knee and is not currently working. Don motioned to approve Grace Gomez's application, Joe 2nd, all in favor; motion carried.
4. Discuss/Approve/Deny Resolution for Oath of Office for Interim Board member: Sara said she gave the form to Grace for review before the meeting along with the previous Board minutes to get her caught up on recent events in the District. Joe motioned to approve the Oath Resolution, Don 2nd, all in favor; motion carried. Sara said she will get Grace the Board Orientation packet for review.
5. Discuss/Approve/Deny Water Grant Application: Sara reviewed the Water Grant Policy and application submitted by the Rotary Club. Rotary President; Leon Potter said he would be attending on their behalf. The Rotary Club requested the water off at the Park/Pool when receiving their 1st bill after the prior year Water Grant expired. Don said he does not know if the community would be happy paying for the water now that Rotary does not plan on opening the pool again. He said there are other non-profits that may be interested in taking over the operations of the pool to open next summer. Melvin and Don have been working on getting things going. The SR 347 overpass plans may affect the parks trees. The park won't need to be watered again until spring. Joe said the application only applies to the Rotary Club and if another entity take over operations of the pool they will have to apply. Joe motioned to approve the Water Grant. Grace asked why the Rotary Club doesn't pay for the water. Sara explained they were not paying for at least 6 yrs. and prior and feels it may be due to mismanagement of their Budget. In order for the District to account for the water instead of having it as loss it was decided to develop a Water Grant that require the recipient to acknowledge the District for the water and put conservation systems in place. Rotary Club has never given a reason for their lack of responsibility for the cost of the water they use. Grace said she understood the need for the District to cover itself from water loss reporting. Grace 2nd the motion, all in favor; motion carried. Sara said she will send the Rotary Club a letter that they application was approved.
6. Discuss/Approve/ Deny Pinal County Line of Credit; Letter of Declaration: Sara submitted the form for review and noted the District has to renew this with Pinal Co. Treasurers every year and will not exceed \$10 million. Joe motioned to approve, Grace 2nd, all in favor; motion carried.
7. Discuss/Approve/Deny Pinal County Housing Service Deposit Increase: Sara said she spoke with lawyer Steve Cooper about how to proceed with an increase of the PCH Deposits. She noted the original increase was not part of their By-laws. PCH representatives met with MDWID on Nov. 6th to discuss the debt on previous tenants accounts and the inability to collect from PCH as is done for all other land owners. PCH agreed the Deposit amount should be increased to cover future delinquent amounts. Joe does not think PCH will agree to pay the current delinquent amounts and will continue to have the new tenants pay it off before moving in. He suggested an increase to \$180 for the deposit amount. Joe motioned to approve an increase to \$180 PCH Deposit for new tenants, Don 2nd, all in favor; motion carried. Sara said she will notify PCH and the new

MDWID 000780

amount should go into effect Jan. 1st. Grace said the case workers at PCH told her the water rates in MDWID were too high to qualify for Section 8 housing. There was discussion on the difference between Section 8 housing and PCH qualifications. Global Water rates are very high in comparison to MDWID and PCH may have them confused.

8. Discuss/Approve/Deny Changes to Medical Expense Reimbursement Plan funding cycle: Sara said TASC, the 3rd party company in charge of the HRA account, funds the employees debit cards in January but the District funds in the Fiscal year starting in July. This only gives employees 6 month to use the amount on the cards instead of a year since the amount doesn't roll over. Sara would like to get approval to change the funding period to match the TASC funding year. Joe said to review the taxing and funding cycle with CPA, Jim. Joe motioned to approve changing the funding cycle to the calendar year, Grace 2nd, all in favor; motion carried.

9. Discuss/Approve/Deny Public Auction for Office equipment and misc.: Sara said since they upgraded their computers the District has equipment that can be sold to clear from the office. The Misc. refers to any cords or stuff the crew may have to get rid of also. Joe asked about the computer equipment security. Sara said she will have the computers wiped before the auction. Don recommended offering bids accepted by mail. Sara said she will post the auction online also. Joe motioned to approve a Public Auction, Grace 2nd, all in favor; motion carried.

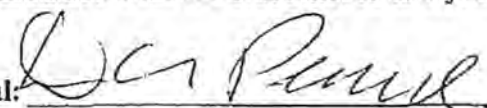
10. Discuss/Approve/Deny Annual Holiday Party date, time & budget: Sara said they used some of the budgeted funds for the Memorial for Sean Lafitte. She said the Board can have a smaller party by not inviting the other district Boards as an option to stay closer to the original budget. The Board would like to continue to invite the other Boards Directors for the districts managed by MDWID. Joe suggested holding the party again at the Fire House on Edison Rd. Don said his 70th Anniversary party is Jan. 11th at the Elks Club in Coolidge. Sara said she will find out about availability for Jan. 17th from 2 to 5pm. She will get invitations out to the other Boards as soon as possible and try to get more of them to RSVP. Sara will have more info for the budget, date and time for the next meeting.

11. Engineer's Report: Bill Collings said the City has submitted for the CDBG funds to complete Phase 2 of the South Side Prj. the cost estimate and the fixed Engineering fees come to \$144,500. KED instead of the City will be handling the majority of the paperwork needed during the project for payment disbursement submittal. The funding should be available through CDBG in April or May 2015. The District will be able to include the project in their 2015-16 Budget yr. to start. The next portion will go through more of Brad Butz property. Bill is hoping there won't be as many delays on the process as there were in the previous phase. A lot of the delay was because the Butz family was unreachable and then protested the easement process.

The Lexington Prj. base mapping is complete. The Edison Rd. review is also done per the City request. They plan to widen Edison Rd. through a portion of Mr. Koslow's Sonoran Creek property there. The plans include continuing Edison Rd. near the Well #4 on Hwy. 238 and will affect the lines. There are also plans to extend Garvey Ave. when the Train Station is relocated there. Bill said he is in close contact with the City on these projects. The City also plans to go forward with the solar crossing light pole on Honeycutt Rd. near Butterfield School. The proposed pole location is too close to the Transmission main. The district would be responsible for the relocation if needed but the water cannot be off for more than 4 hours for customers in SRDWID. Bill suggested all PCH units have a backflow device to avoid issues if tenants are shut-off and still living there.

12. Field Manager's Report: Gilbert Sanchez not present but sent a report to Sara for the Board. The power switch on the booster pump panel broke. Rich Logue from Logue Electric came out and by-passed it and ordered a new replacement. Leon Potter arrived. Don informed him the Water Grant was approved earlier in the meeting and asked what the Rotary Cubs intentions are with the property for the future. Mr. Potter said the park will remain open to the public and the trees need to be watered over the winter season. He thanked the Board for the Water Grant approval.

III: ADJOURNMENT: Grace moved to adjourn at 6:30, Joe 2nd, all in favor; motion approved.

Approval: 

Date: 12/17/14

Equal Opportunity Provider & Employer

MDWID 000781

Office: (520) 568-2239
 Fax: 568-2185
 Emergency No. (520) 251-1836

MARICOPA DOMESTIC WATER IMPROVEMENT DISTRICT

44801 W. Honeycutt Rd.
 P.O. Box 269
 Maricopa, AZ 85239-0269

MINUTES OF THE REGULAR BOARD MEETING December 17, 2014

- I:
- A. Call meeting to order at 5:35 pm
 - B. Roll call: Don Pearce & Joe Hoover present. Confirmation of Quorum
 - C. Minutes: Joe motioned to accept the minutes of 11/19/14 Regular meeting, Don 2nd, all in favor; motion carried.
- II: BUSINESS BEFORE THE BOARD
- 1. Call to Public: None present
 - 2. Financial Report: Sara Sheehan submitted the Balance sheet for review. She noted the Wells Fargo Account was funded for the Semi-Annual USDA loan payment auto-withdrawal on Jan. 1st. Sara said the USDA Annual report and Wells Fargo authorization renewal needed signature from the Board in order to submit. She is waiting on the Year End Financial reports from CPA, Jim Chaston also to complete these reports. Bill Collings said USDA can take the owed funds for the remainder of the loan if the district has the amount already set aside. Sara said she will check how much is left owing on the loan. Seven Ranches district was interested in paying off the remainder of their loan if able to.
 - 3. Engineer's Report: Bill said the City did not receive the CDBG Funds for the remainder of the Southside Prj. due to the lack of Environmental Impact report. They plan to reapply for the funding in the new cycle. The CDBG application item went before the City Council at their last meeting. The Roosevelt/Taft Rd. plans should be ready to submit next month and will get with Sara for a check amount for the application fees.
 - 4. Field Manager's Report: Gilbert Sanchez said the crew have been unable to find the valve needed to isolate Roosevelt. Pinal County Public Works may have destroyed or buried it doing road work. They chip sealed over the valve location. There should be a 90 degree bend. Between the Hydrant and an elbow then another valve around the bend. Joe asked about the street level. Bill said the street level is low but cannot be raised because it would cause issues with flooding to the surrounding streets. Bill submitted a map of the project area for review. Joe asked if the Arsenic testing results are showing an increase. Gilbert said he will get with Joe Fiano of Water Treatment Operators. The Arsenic Media filters need to be changed when the test level reaches .10. Gilbert said they had a system inspection performed by ADEQ and all had gone well. They noted the screen on the air release valve was needed to be replaced. There was discussion on Ionic Exchange and granulate oxidize systems. Bill said the City will need to address an issue on drainage of line conflict with the district on their Edison Rd. extension project. The project will extend the road and effect the District Well#4. The district should be able to condemn the easements for the lines to the well. Don said he will talk to John Smith about the easements needed. One of Mr. Smith's sons is now in control of that property. The Honeycutt Rd. potholing is complete for the solar speed limit sign the City is installing. They will install it over the water lines with a foot clearance.
 - 5. Discuss/Approve/Deny Utility Share Application: Sara submitted the application from Gloria Ramirez Acct. 1570-GR. They made arrangements to pay on Jan. 6th but a new bill will have gone out by then and they are already on the list for disconnection. If they approve for funds it will cover the previous balance they owe. Joe motioned to approve the application for full amount of funds available, Don 2nd, all in favor; motion carried.
 - 6. Discuss/Approve/Deny Annual Holiday Party budget: Sara submitted the menu from Helen's Kitchen for review. Item #1 and tossed salad was approved by the Board.
 - 7. Discuss Approve/Deny Employee Bonus amount: Sara reviewed what was set aside in the Budget for Bonuses and that they are only slightly under budget. The Budget was for 5% bonus amount. Don asked if the other districts could be charged an additional fee to cover the bonuses. Since the bonuses are for MDWID Employees it does not seem to be something that should be the responsibility of the other districts to fund as an additional cost above their contract fees. Joe would like to look at the bonus rate for changes in the next budget year but approves of the rate as it is currently set for this year. Joe motioned to approve the bonuses at 5%, Don 2nd, all in favor; motion carried. Sara said she would like to print the checks tomorrow in order to hand out to employees before the weekend.
- III: ADJOURNMENT: Joe moved to adjourn at 6:19, Don 2nd, all in favor; motion approved.

Approval: Joe Hoover

Date: Jan 21, 2015

Equal Opportunity Provider & Employer

MDWID 000931

EXHIBIT N

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Melissa J. England, State Bar No. 022783
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Attorneys for Defendant Maricopa Domestic Water
Improvement District

UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

Southwest Fair Housing Council, Inc., an
Arizona nonprofit corporation; Tavita Pena;
and Jennifer Peters,

Plaintiffs,

v.

Maricopa Domestic Water Improvement
District, an Arizona municipal corporation;
and Pinal County, an Arizona County,

Defendants.

Case No. CV-17-1743-PHX-JJT

**MARICOPA DOMESTIC WATER
IMPROVEMENT DISTRICT'S
RESPONSES TO PLAINTIFFS'
REQUESTS FOR ADMISSIONS
(Nos. 1-47)**

Pursuant to Federal Civil Procedure Rule 36, Defendant Maricopa Domestic Water
Improvement District ("the District") hereby responds to Plaintiffs' Requests for
Admission as follows:

RESPONSES TO REQUESTS FOR ADMISSION

1. The Maricopa Domestic Water Improvement District (MDWID) is an
Arizona special district formed by the Pinal County Board of Supervisors.

☒ Admit ☐ Deny

2. As of June 5, 2015, MDWID's website included the following statements:

SERVICES FEES: MDWID

1. Service Deposit \$75.00

\$20.00 Service fee is Non Refundable

\$55 Refundable upon vacating (with account in good standing)

PINAL COUNTY PUBLIC HOUSING \$200.00

\$20.00 Service fee is Non Refundable

\$180 Refundable for Public Housing upon vacating

X Admit ☐ Deny

3. Effective January 1, 2015, MDWID increased the refundable deposit for Pinal County's public housing dwellings.

X Admit ☐ Deny

4. Effective January 1, 2015, MDWID required new customers who occupied Pinal County's public housing dwellings to pay a \$180 refundable deposit to establish water service and a \$20 non-refundable service fee.

X Admit ☐ Deny

5. Effective January 1, 2015, all other MDWID residential hookups were required to pay a refundable "service fee" of \$55 to establish new service.

X Admit ☐ Deny

6. Effective January 1, 2015, MDWID adopted a policy that if a public housing customer was late four times within one year, the customer's service deposit refund would be made at the Board's discretion ("late payment policy").

X Admit ☐ Deny

7. No "late payment policy" was adopted in 2015 by MDWID for customers who did not occupy public housing.

X Admit ☐ Deny

8. MDWID issued notices stating that the service deposits for public housing residents were refundable if "timely payments" for service were made by the public housing customers ("timely payments policy").

X Admit ☐ Deny

1 9. No “timely payments policy” was adopted in 2015 by MDWID for
2 customers who did not occupy public housing.

3 X Admit ☐ Deny

4 ***Pena***

5 10. In May 2001, MDWID charged Pena a combined deposit and service fee of
6 \$65 to initiate water service: \$50 for a refundable guarantee and \$15 for a non-refundable
7 turn-on/meter reading fee.

8 X Admit ☐ Deny

9 11. In November 2016, Pena applied for MDWID to transfer her water service
10 from her existing public housing dwelling to a different public housing dwelling.

11 ☐ Admit X Deny

12 **Response: MDWID objects to the use of the word “transfer” as water**
13 **service accounts are not transferred from one location to another. Rather, a new**
14 **account is initiated for a separate location.**

15 12. In November 2016, a MDWID employee told Pena that she was required to
16 pay \$200 to transfer her water service from one public housing unit to another public
17 housing unit.

18 ☐ Admit X Deny

19 **Response: MDWID objects to the use of the word “transfer” as water**
20 **service accounts are not transferred from one location to another. Rather, a new**
21 **account is initiated for a separate location.**

22 13. In November 2016, MDWID charged Pena \$180 as a refundable service
23 deposit to transfer water service from one public housing unit to another public housing
24 unit.

25 ☐ Admit X Deny

26 **Objection: MDWID objects to the use of the word “transfer” as water**
27 **service accounts are not transferred from one location to another. Rather, a new**
28 **account is initiated for a separate location.**

1 14. In November 2016, MDWID charged Pena \$20 non-refundable service fee
2 to transfer her water service from one public housing unit to another public housing unit.

3 ☐ Admit X Deny

4 **Objection: MDWID objects to the use of the word “transfer” as water**
5 **service accounts are not transferred from one location to another. Rather, a new**
6 **account is initiated for a separate location.**

7 ***Service***

8 15. Since at least January 1, 2012, MDWID provides water service to dwellings
9 as well as commercial properties within its service area.

10 X Admit ☐ Deny

11 16. Since at least January 1, 2012, MDWID is the sole provider of domestic
12 water service within its boundaries.

13 X Admit ☐ Deny

14 17. MDWID provides domestic water service outside its boundaries.

15 X Admit ☐ Deny

16 ***Revenue***

17 18. Since at least January 1, 2012, MDWID obtained revenue through the sale
18 of water.

19 X Admit ☐ Deny

20 19. Since at least January 1, 2012 MDWID obtained revenue for the
21 management of other water district.

22 X Admit ☐ Deny

23 20. Since at least January 1, 2012 MDWID obtained revenue for providing field
24 services to the water districts.

25 X Admit ☐ Deny

Net assets

21. As of June 30, 2014, MDWID held total net assets of more than \$2.4 million.

☐ Admit ☒ Deny

Response: MDWID cannot confirm the value of its assets without having a CPA evaluate and calculate the appropriate value.

22. As of June 30, 2015, MDWID held assets of more than \$2.4 million.

☐ Admit ☒ Deny

Response: MDWID cannot confirm the value of its assets without having a CPA evaluate and calculate the appropriate value.

23. For the fiscal year ending June 30, 2014, MDWID's total operating revenue exceeded its total operating expenses.

☒ Admit ☐ Deny

Alternatives

24. MDWID never presented Pinal County with an IGA governing water service to the public housing units located in Maricopa.

☐ Admit ☒ Deny

Response: Pinal County refused to consider an IGA to resolve service issues.

25. MDWID never recorded a lien on any Pinal County property to collect delinquent water bills owed from hookups to public housing in Maricopa.

☒ Admit ☐ Deny

Response: MDWID cannot place a lien Pinal County property.

26. MDWID never sued Pinal County to collect on delinquent water bills owed from hookups to public housing in Maricopa.

☒ Admit ☐ Deny

27. MDWID puts liens on an owner's property for failure of owner's tenants to pay water bills.

☒ Admit ☐ Deny

1 28. MDWID never required Pinal County to execute a land-owner agreement.

2 ☐ Admit X Deny

3 **Response: MDWID responds that Pinal County refused to execute a land**
4 **owner agreement when one was submitted by the District.**

5 ***Disparity***

6 29. For some period of time between January 1, 2015 and January 1, 2018,
7 MDWID required a new occupant seeking to establish water service at a public housing
8 dwelling to pay off any delinquency of the prior tenant of that public housing dwelling
9 before MDWID would provide water service to the new occupant (“new tenant pays prior
10 delinquency practice”).

11 ☐ Admit X Deny

12 **Response: MDWID responds that the District notified Pinal County**
13 **Housing of delinquencies and required payment of balances prior to new tenant**
14 **occupancy. Potential tenants were informed of Pinal County’s balances and given**
15 **the option to pay the balance. Pinal County forced potential tenants to pay their**
16 **delinquent balances without reimbursement on threat of losing occupancy approval.**

17 30. MDWID never enforced a new tenant pays prior delinquency practice
18 against tenants of nonpublic housing.

19 ☐ Admit X Deny

20 31. In 2012, there were public housing tenants who were not delinquent in the
21 payment for water service provided by MDWID.

22 X Admit ☐ Deny

23 32. In 2012, there were nonpublic housing tenants who were delinquent in the
24 payment for water service provided by MDWID.

25 X Admit ☐ Deny

26 33. In 2013, there were public housing tenants who were not delinquent in the
27 payment for water service provided by MDWID.

28 X Admit ☐ Deny

1 34. In 2013, there were nonpublic housing tenants who were delinquent in the
2 payment for water service provided by MDWID.

3 X Admit ☐ Deny

4 35. In 2014, there were public housing tenants who were not delinquent in the
5 payment for water service provided by MDWID.

6 X Admit ☐ Deny

7 36. In 2014, there were nonpublic housing tenants who were delinquent in the
8 payment for water service provided by MDWID.

9 X Admit ☐ Deny

10 37. In 2015, there were public housing tenants who were not delinquent in the
11 payment for water service provided by MDWID.

12 X Admit ☐ Deny

13 38. In 2015, there were nonpublic housing tenants who were delinquent in the
14 payment for water service provided by MDWID.

15 X Admit ☐ Deny

16 39. In 2016, there were public housing tenants who were not delinquent in the
17 payment for water service provided by MDWID.

18 X Admit ☐ Deny

19 40. In 2016, there were nonpublic housing tenants who were delinquent in the
20 payment for water service provided by MDWID.

21 X Admit ☐ Deny

22 ***Exhibits***

23 41. Exhibit 1 (Deposition exhibit 28, bates numbers 897) is a true and correct
24 copy of the original.

25 X Admit ☐ Deny

26 42. Exhibit 2 (Deposition exhibit 42, bates numbers 225) is a true and correct
27 copy of the original.

28 X Admit ☐ Deny

1 43. Exhibit 3 (Deposition exhibit 42, bates numbers 224) is a true and correct
2 copy of the original.

3 X Admit ☐ Deny

4 ***Process and Disclosure***

5 44. The different terms imposed on public housing customers than nonpublic
6 housing customers were not authorized by the MDWID's bylaws.

7 ☐ Admit X Deny

8 **Response: The bylaws do not address this specific issue.**

9 45. MDWID never disclosed to USDA that it imposed different terms for the
10 provision of water service on public housing customers than it imposed on nonpublic
11 housing customers.

12 ☐ Admit X Deny

13 **Response: USDA is provided current water and service fee rates each year.**
14 **At the tri-annual review, USDA was informed of this lawsuit and the out of district**
15 **circumstance of Pinal County Housing property.**

16 46. MDWID never disclosed to the Pinal County Board of Supervisors that it
17 imposed different terms for the provision of water service on public housing customers
18 than it imposed on nonpublic housing customers.

19 ☐ Admit X Deny

20 **Response: Pinal County annual reports do not require current rates and fee**
21 **schedule. Pinal County Board of Supervisors is informed of the present lawsuit and**
22 **the out of district circumstances of Pinal County Housing property.**

1 Dated on May 28, 2019.

3 BARRETT & MATURA, P.C.

6 By: /s/ Jeffrey C. Matura
Jeffrey C. Matura
Melissa J. England
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Scottsdale, Arizona 85258
Attorneys for the Maricopa Domestic
Water Improvement District

11 ORIGINAL of the foregoing mailed
12 and e-mailed on May 28, 2019 to:

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27 /s/ Carolyn Harrington
28 4812-7110-4078

EXHIBIT O

Pinal County Housing Customer Deposits will increase for New tenants Starting Jan. 1, 2015. This will only effect new residents at the Pinal County Housing Complex. The new Deposit fee will be \$180.00.

Coming Soon: Customers will be able to check their account balance online. Próximamente: Los clientes podrán comprobar el saldo de su cuenta en línea

Follow us on facebook.com for notices and events

MDWID REGULAR BOARD MEETINGS on 3rd Wed. each month at 5:30 p.m. at 19756 N. John Wayne Pkwy. #109, Maricopa AZ

Effective Dec. 2013; There will no longer be same day reconnection of Service if your service is interrupted for non-payment.

Return this part
with payment.

E.O.E.

Page 1 of 1

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MDWID 000225

EXHIBIT P

Redacted

Office: (520) 568-2239
 Fax: 568-2185
 Emergency No. (520)251-1896

MARICOPA DOMESTIC WATER IMPROVEMENT DISTRICT

44301 W. Honeycutt Rd.
 P.O. Box 209
 Maricopa, AZ 85239-0209

Revised 12/1/2014; Effective 1/1/2015

PINAL COUNTY PUBLIC HOUSING

Name/Nombre: [Redacted] Telephone: 520-[Redacted]
 Service Address/Dirección: 45005 W. Edwards CR. [Redacted] Email/Correo Elec [Redacted]
 Mail Address/Dirección de Correo: 45005 W. Edwards [Redacted]
 (P.O. BOX IS NEEDED-No postal delivery available at service address)
 City: Maricopa State: AZ Zip Code 85139

Race/ Ethnicity: White: ☐ Hispanic: ☐ African Am.: ☒ Am. Indian: ☐ Asian/Pacific Islander: ☐
 Other: _____

Turn on of Water Service

Agreed Start date: 7/21/15 Time Frame: Any time after 12:00pm

If the customer's valve is determined to be inaccessible or faulty, the meter will be turned off and the customer notified. A new date and time frame must then be set with District staff to turn on services.

\$200.00 Deposit Total for the following:

\$20.00 Service Fee (Non Refundable)

\$180.00 Deposit (Refundable upon payment with timely payments. If late fee is within 1 yr, refund made at District's discretion. If not, refund made at District's discretion. If not, refund made at District's discretion. If not, refund made at District's discretion.)

I hereby apply for water service at the address above under the terms and rates approved by the Board of Directors, and agree to pay for same as due.

Signature/Firma: [Redacted] Date 7-20-15

SERVICE INFORMATION: Copy of Photo ID & copy of Pinal County Housing contract required.

Service start date 7/21/15
 \$100.00 Deposit Total in the following:

Account # 2130-13-GW
 Cash/Check \$211.58

District Signature [Redacted]

Deposit Date 7/20/15

MDWID is an Equal Opportunity provider and employer

MDWID 000514

EXHIBIT Q

Redacted

MARICOPA DOMESTIC WATER IMPROVEMENT DISTRICT
19756 N JOHN WAYNE PARKWAY SUITE 109
MARICOPA, AZ 85139
520-568-2239 FAX 520-568-2185

(SOP)

Updated
2/24/2017

"Our purpose is to serve our community with the best water possible. This involves being compliant with potable water regulations, looking and planning to future improvements while being mindful of the residents' outlook as well as economic capability. This Special District has its origin in the desire of a small group of people to provide a potable and reliable water supply to its residents. It has gone through many changes over many years with the involvement of many of its' people. The goal remains the same since its inception: Good, reliable water supply through innovation, training, dedication and cooperation with the community. "

EXHIBIT #
WITNESS

16

MARTY HERDER, CCR 50152

MDWID 000017

ACRONYMS & PO Boxes

MDWID—Maricopa Domestic Water Improvement District—PO BOX 209

SERVICE FEES

Below are the new service Deposit & Service fees. Refer to all other fees and Water Rates in .
MDWID—

MDWID Regular Customers

Public Housing -Accounts)

\$55 Refundable upon vacating
\$20 Service is Non-Refundable
\$75 Total

\$180 Refundable upon vacating
\$20 Service is Non-Refundable
\$200 Total

- Reconnect Fee = 55.00

EXHIBIT R

Redacted

Office: (520) 568-2239
 Fax: 568-2185
 Emergency No. (520)251-1896

MARICOPA DOMESTIC WATER IMPROVEMENT DISTRICT

PWS-11-026

44801 W. Honeycutt Rd.
 P.O. Box 209
 Maricopa, AZ 85239-0209

PINAL COUNTY PUBLIC HOUSING

Name: Jennifer Peters Telephone: [REDACTED]
Print
 Landlord: Pinal County housing Rent: ☒ Own: ☐
Name & Telephone
 Service Address: 44957 W. Edwards circle
 City: Maricopa State: AZ Zip: 85130
 Mail Address: 42094 W. [REDACTED]
(If different from service address)
 Email: [REDACTED] ☒ Please email my bills
 Race/ Ethnicity:
 White: ☒ Hispanic: ☐ African Am.: ☐ Am. Indian: ☐ Asian/Pacific Islander: ☐ Other: ☐

\$200.00 Deposit Total for the following: \$20.00 Service Fee (Non Refundable) & 180.00 Deposit
Account is billed on the 1st and is due on the 20th of each month

Turn on of Water Service – Customer, owner or designated representative must be present at time of Water Turn on.
Agreed Start date: _____ **Time Frame:** _____

If the customer's valve is determined to be inaccessible or faulty, the meter will be turned off and the customer notified. A new date and time frame must then be set with District staff to turn on services.

☐ **Waiver of District Responsibility**
 No customer, land owner or designated representative will be present during agreed date & time frame of turn on, and therefore the District is released of responsibility for loss of resources or property damage caused by leaks occurring at or after time of turn on. I understand if no one is present at the time of turn on, the field staff will turn on the district service meter without any liability to the district.

I hereby apply for water service at the address above under the terms and rates approved by the Board of Directors, and agree to pay for same as due.

Customer Signature: [REDACTED] Date: 6-20-16

SERVICE INFORMATION:

*Copy of Photo ID required. Previous Balance must be Paid in Full at time of new service connection.

Service start date: 6-27-16
 \$200.00 Deposit Total in the following:
 Previous Balance: 0

Account #: 2130-05-JP
 Cash/Check: _____
 Total Paid: _____

District Signature: [REDACTED] Deposit Date: 6.27.16

MDWID is an Equal Opportunity provider and employer

EXHIBIT # 5
 Page 1 of 1 Peters
 MARTY HERDER, CCR 50162

MDWID 001325

Community Action Human Resources Agency

109 N Sunshine Blvd

Eloy, Arizona 85131

PHONE: (520) 466-1112 FAX: (520) 466-0013

Toll Free: 1-877-472-2472

Time: 1058 AM
Date: 06/24/2016

Fax Transmission

CAHRA

If you do not receive all copies of this FAX transmission, please call us.

People
Helping
People
Since
1981

From: [REDACTED]

To: Customer Service Representative

From: Maricopa Domestic Water

Fax: 520-568-2185

Number of Pages including cover page: 1

Community Action

Human Resources Agency

109 N Sunshine Blvd Eloy, AZ 85131

(520) 466-1112 Fax (520) 466-0013

Toll Free: 1 (877) 472-2472



United Way
It brings out the best
in all of us

GUARANTEE OF UTILITY ASSISTANCE

The applicant listed below has applied for utility assistance under the program selected below:

APS \$ _____ EAP \$ _____ ESGP \$ _____ EFSP \$ _____ LIHEAP \$ _____ LIHEAP SUPP \$ _____

NHN \$ _____ SRP \$ _____ STCS \$ _____ URRD \$ _____ UW \$ _____ OTHER \$ 200.00Community Action Human Resources Agency Guarantees \$ 200.00 on the account.Applicant Name: Jennifer Peters Date: 06/24/2016Account Number: 2130-05-UP Utility Company: Maricopa Domestic Water

If for deposit, SERVICE ADDRESS:

44957 W. Edwards Circle [REDACTED] Maricopa AZ 85138

Checks are mailed directly to the utility companies within 4-6 weeks.

Any monies due to the utility company above the amount guaranteed by CAHRA, are the responsibility of the applicant.

Signature of CAHRA Staff Member

Case Manager

Title

EXHIBIT # 6
WITNESS Peters

MARTY HERDER CCR 50162

MDWID (CAHRA) 000036

COMMUNITY ACTION HUMAN RESOURCES AGENT

109 N SUNSHINE BLVD ELOY, AZ 85131-TEL# 520-466-1112 / 1-877-472-2472 / FAX# 520-466-0013

UTILITY BILLING INFORMATION FORM

This is to certify that Community Action Human Resources Agency Case Manager called

Maricopa Domestic Water and spoke to Sara
 Utility Company Company Representative Name

On 06/20/2016 to verify the following information because
 Date

Jennifer Peters did not bring his/her utility billing statement to our office.
 Client Name

*NOTE: If account name holder not listed in household, state relation to client

Account Name(s): Jennifer Peters

Deposit Account #: _____

Service Account#: 2136-05 JP

Charge off / Write off Account #: _____

Utility Service Address:

Mailing Address:

44957 W. Edwards Circle
Maricopa AZ 85138

/ Same /

Billing Amount Information Below:	Amount Before Discount Program Credit:	Amount of 1 month Discount Program Credit:	Total (1 Month Billing) Amount Due	Date Due:
Deposit Amount	NA	NA	\$ 180.00	06/20/2016
Re-connect fee	NA	NA	\$ 20.00	06/20/2016
Current 1- month billing amount	\$	\$	\$	
Past due 1 month billing amount	\$	\$	\$	
2 nd Month or more past due amount	NA	NA	\$	
Charge off / Write off amount	NA	NA	\$	
Additional /other fees due	NA	NA	\$	
TOTAL AMOUNT DUE	\$	\$	\$ 200.00	06/20/2016

NOTES:

PETERS, JENNIFER L.

HHID: 17784

Case Manager Signature

Date

MDWID (CAHRA) 000037

UTILITY INFORMATION RELEASE AUTHORIZATION FORM

☐ Arizona Public Service☐ UniSource Energy Services☐ Salt River Project☐ Trico Electric Cooperative☐ Tucson Electric Power☐ Southwest Gas

By signing this form, I authorize the above named utility provider(s) (indicated by box checked) to release my historical and future utility bills, account information (such as but not limited to name, service address, account number, balance, payment history) and other information concerning or related to energy consumption and costs to any and all of the agencies/persons listed on this form ("Authorized Parties"). This release is granted in connection with my household's request for and/or receipt of assistance from the community agency listed below.

I understand and agree that the utility information released may be compiled and analyzed (both on an individual household and combined basis) by one or more of the Authorized Parties. I further understand and agree that the utility information released, as well as any statistical or other analysis may be released by the Authorized Parties to a third party for reporting purposes related to assistance received, and no information released shall be made public in such a manner that my dwelling or my household occupants can be identified.

I further agree to release and hold harmless the above named utility provider(s) from: (i) any claims, damages, liability or expenses resulting from the use or disclosure of information based on this Authorization; (ii) the unauthorized use or disclosure of the information by any of the Authorized Parties; and (iii) any actions taken by any of the Authorized Parties based on this Authorization.

AUTHORIZED PARTIES:

Community Agency:

Name of agency determining assistance Community Action Human Resources Agency

Arizona Community Action Association

Arizona Department of Administration,
Office of Grants and Federal Resource

Arizona Department of Economic Security

Signature of Account Holder/Customer of Record: XPrint Account Holder/Customer of Record: Jennifer Peters

Signature of Joint Account Holder/Customer of Record: _____

Print Joint Account Holder/Customer of Record: _____

Service Address: 44957 W Edwards CircleAccount Number: 2130-05-JPDate: Oct 20 2016

UTILITY INFORMATION RELEASE AUTHORIZATION FORM

☐ Arizona Public Service☐ UniSource Energy Services☐ Salt River Project☐ Trico Electric Cooperative☐ Tucson Electric Power☐ Southwest Gas

By signing this form, I authorize the above named utility provider(s) (indicated by box checked) to release my historical and future utility bills, account information (such as but not limited to name, service address, account number, balance, payment history) and other information concerning or related to energy consumption and costs to any and all of the agencies/persons listed on this form ("Authorized Parties"). This release is granted in connection with my household's request for and/or receipt of assistance from the community agency listed below.

I understand and agree that the utility information released may be compiled and analyzed (both on an individual household and combined basis) by one or more of the Authorized Parties. I further understand and agree that the utility information released, as well as any statistical or other analysis may be released by the Authorized Parties to a third party for reporting purposes related to assistance received, and no information released shall be made public in such a manner that my dwelling or my household occupants can be identified.

I further agree to release and hold harmless the above named utility provider(s) from: (i) any claims, damages, liability or expenses resulting from the use or disclosure of information based on this Authorization; (ii) the unauthorized use or disclosure of the information by any of the Authorized Parties; and (iii) any actions taken by any of the Authorized Parties based on this Authorization.

AUTHORIZED PARTIES:

Community Agency:

Name of agency determining assistance Community Action Human Resources Agency

Arizona Community Action Association

Arizona Department of Administration,
Office of Grants and Federal Resource

Arizona Department of Economic Security

Signature of Account Holder/Customer of Record: X [Signature]Print Account Holder/Customer of Record: Jennifer PetersSignature of Joint Account Holder/Customer of Record: [Signature]

Print Joint Account Holder/Customer of Record: _____

Service Address: 44957 W Edwards Circle [Redacted] Mesa, AZ 85138Account Number: 9001277 [Redacted]Date: Dec 12, 2016

EXHIBIT T

Acknowledgment

I, Mary Lou Rosales am a representative of CAHRA, and hereby acknowledge and thank Jennifer Peters for reimbursing \$200.00 of the funds provided to her in order to obtain utility service.

Date: 2/7/2019

Signature: Mary Lou Rosales

EXHIBIT U

Redacted

Office: (520) 568-2239
 Fax: 568-2185
 Emergency No. (520) 251-1896

MARICOPA DOMESTIC WATER IMPROVEMENT DISTRICT

44801 W. Honeycutt Rd.
 P.O. Box 209
 Maricopa, AZ 85239-0209

PINAL COUNTY PUBLIC HOUSING

Name: Tania Peña Telephone: 520 [REDACTED]
 Landlord: Pinal County D of Housing Rent: ☒ Own: ☐
 Service Address: PO Box 45053 W Edwards CR
 City: Maricopa State: AZ Zip: 85139
 Mail Address: PO Box 1296 Maricopa AZ 85139
 (If different from service address)
 Email: _____ [] Please email my bills

Race/ Ethnicity:

White: ☐ Hispanic: ☐ African Am.: ☐ Am. Indian: ☐ Asian/Pacific Islander: ☐ Other: _____

\$200.00 Deposit Total for the following: \$20.00 Service Fee (Non Refundable) & 180.00 Deposit

Account is billed on the 1st and is due on the 20th of each month

Turn on of Water Service – Customer, owner or designated representative must be present at time of Water Turn on.

Agreed Start date: 12-05-2016 Time Frame: Morning

If the customer's valve is determined to be inaccessible or faulty, the meter will be turned off and the customer notified. A new date and time frame must then be set with District staff to turn on services.

☐ Waiver of District Responsibility

No customer, land owner or designated representative will be present during agreed date & time frame of turn on, and therefore the District is released of responsibility for loss of resources or property damage caused by leaks occurring at or after time of turn on. I understand if no one is present at the time of turn on, the field staff will turn on the district service meter without any liability to the district.

I hereby apply for water service at the address above under the terms and rates approved by the Board of Directors, and agree to pay for same as due.

Customer Signature: Tania Peña Girona Date: 11-18-16

SERVICE INFORMATION:

* Copy of Photo ID required. Previous Balance must be Paid in Full at time of new service connection.

Service start date: 12-05-2016 Account #: [REDACTED]-19-TP
 \$200.00 Deposit Total in the following: Cash/Check: _____
 Previous Balance: _____ Total Paid: _____

District Signature: _____ Deposit Date: _____

Customer will pay for Deposit on 12/05/2016.

MDWID is an Equal Opportunity provider and employer

Confidential

EXHIBIT # 4
 WITNESS

MARTY HERDER, CCR 50162

Office: (520) 568-2239
 Fax: 568-2185
 Emergency No. (520) 251-1896

MARICOPA DOMESTIC WATER IMPROVEMENT DISTRICT

PWS-11-036

44801 W. Honeycutt Rd.
 P.O. Box 209
 Maricopa, AZ 85239-0209

TERMS AND CONDITIONS OF SERVICE FOR MARICOPA DOMESTIC WATER IMPROVEMENT DISTRICT

1. Water furnished to a property by the District shall be used only on the customer's premises and shall not be resold, or diverted to any other premises. During critical water conditions, as determined by the District, the customer shall use water only for those purposes specified by the District. During emergency water conditions, as determined by the District, the customer shall use water only for those purposes specified by the District. Disregard for this section shall be sufficient cause for refusal or termination of water service.
2. Each land owner/customer shall be responsible for installing & maintaining all facilities on the customer's side of the point of delivery in a safe & efficient manner & in accord with the rules of the AZ D.E.Q. Each customer shall be responsible for safeguarding all District property installed in or on the customer's premises for the purpose of supplying water to that customer. Each customer shall be responsible for payment for any damage to District facilities resulting from that customer's unauthorized breaking of meter seals, or interfering with, tampering with or bypassing the District meter serving that premises.
3. All bills for water service are due and payable when rendered. Any payment not received within (20) days from the date the water bill was rendered shall be considered delinquent. Failure to receive water bills or notices which have been properly placed in the United States mail shall not prevent such water bills from becoming delinquent nor relieve the customer of his or her obligations therein. If water service is to be re-established within a twelve (12) month period at the same service location for a customer, or for any member of such customer's household, payment of a non-refundable service re-establishment charge is required. In addition, if service was terminated by the District for failure to pay a delinquent balance, then payment of the delinquent balance plus a service reconnection for delinquency charge will also be required. Payment of the applicable charges will be required as a pre-condition to the re-establishment of service and is to be made at the time of application for re-establishment of service.
4. Each land owner who rents out a home or a business is liable for the delinquent amount left by the former tenant. The District will attempt to contact and collect from the former tenant for a 30 day period. The land owner will then be required to pay the delinquent amount and any fees that apply. New tenants or new owners will not be allowed to start service at the property until any previous balance of the land owner or tenant is paid to the District. The owner is not required to pay an additional deposit for reinstating service in their own name for cleaning or maintaining of the premises. The land owner will be billed a basic service fee and cost of water usage at the regular rate plus tax.
5. Lien Procedures apply when a service is disconnected for Non-Payment, and the District has attempted to collect for a 30 day period. An interest fee of 1.5% per mo. will apply for accounts 30 days past due. A letter to the Tenant and or Land owner will be sent informing them of the intent to commence Lien Procedures. The Landlords/Property owners are ultimately responsible for the cost of services rendered to their property. When the delinquent amount is not paid after the collection period, a Claim of Lien for Real Property by the District will be submitted to the Pinal County Recorder. The meter will then be locked and no further monthly fees will be accrued on the account. The claim will be released when the delinquent balance is paid in full. New Account Establishment fees will then be required for new land owners or tenants.
6. The District is allowed to recover a fee, at a rate on file and approved, for each instance where a customer tenders payment for water service with an insufficient funds ("NSF") check. When the District is notified by the bank that there are insufficient funds to cover the check tendered for water service, the District will require the customer to make payment in cash, by money order, certified check, or other means which guarantee the customer's payment to the District. A customer who tenders an NSF check shall in no way be relieved of the obligation to render payment to the District under the original terms of the water bill nor defer the District's provision for termination of water service for nonpayment of water bills.

MDWID is an Equal Opportunity provider and employer

In accordance with Federal law & U.S. Dept. of Agri. policy, this institution is prohibited from discriminating on race, color, national origin, sex, age or disability.

EXHIBIT V

Rec'd 8/21/13

DELINQUENT ACCOUNTS, Service Address: Edwards Cir., MARICOPA AZ.

	\$ 24.13 *
	\$ 41.71 *
	\$ 11.17 *
	\$159.12
	\$105.66
	\$ 79.43
	<u>\$184.45</u>
	\$605.67

* PAID OFF BY NEW TENANT, THEIR DECISION. WATER DEPT.
WILL NOT LET NEW CUSTOMER TURN ON SERVICE
WITHOUT PAYING OFF PAST TENANT BALANCE.

Rec'd 2/12/14

DELINQUENT ACCOUNTS, Service Address: Edwards Cir., MARICOPA AZ.

	\$ 8.17
	\$ 41.71 *
	\$159.12
	\$105.66
	\$ 79.43
	\$ 64.23
	<u>\$184.45</u>
	\$642.77

- MI offer Shoney

** NEW TENANT MOVED IN 1/31/14, IT'S DANA'S UNDERSTANDING
THAT SHE PAID OFF PREVIOUS TENANT ACCT OF \$ 41.71.*

RECEIVED
PINAL COUNTY HOUSING DEPT.
2014 FEB 12 PM 2:07

Office: (520) 568-2239
 Fax: 568-2185
 Emergency No. (520) 251-1896

MARICOPA DOMESTIC WATER IMPROVEMENT DISTRICT

PWS-11-036

44801 W. Honeycutt Rd.
 P.O. Box 209
 Maricopa, AZ 85239-0209

PINAL COUNTY PUBLIC HOUSING

Name: [REDACTED] Phone: 520-[REDACTED]
 (Print name)
 Service Address: 44983 W. EDWARDS Circle [REDACTED] 11 MARICOPA AZ 85139
 Mailing Address: 1046 [REDACTED] 33
 (P.O. BOX IS NEEDED)
 City: Gilbert

*Copy of Photo ID & copy of Pinal County Housing contract

Race/ Ethnicity:

White: ☒ Hispanic: ☐ African Am.: ☐ Am. Indian: ☐ Asian/Pa
 Other: _____

\$100.00 Deposit Total for the following:

\$20.00 Service Fee (Non Refundable)

\$80.00 Deposit (Refundable upon vacating with timely pa
 refunds made at Districts discretion. If service is shut off 3x's in
 All payments are due on the 20th of each month.)

I hereby apply for water service at the address above under the te
 approved by the Board of Directors, and agree to pay for same as due.

Signature: [REDACTED] Date: 10/29/14

SERVICE INFORMATION:

Service start date 10-30-14

\$100.00 Deposit Total in the following:

Account # 2130-11-JC.

Cash/Check 259.12

159.12
 past bill
 100 -
 \$ 259.12

District Signa [REDACTED]

Deposit Date 10-29-14

MDWID is an Equal Opportunity provider and employer

aps

DOMESTIC WATER
MENT DISTRICT
11-03444801 W. Honeycutt Rd.
P.O. Box 209
Maricopa, AZ 85239-0209

Angie
Here is a copy of main
water receipt for the
new tenant @
102 07B, were
they made him pay
Prior bal.

Turn in your old fridge
Save up to \$100 in energy savings
FREE pick up
Get a \$30 rebate

Learn more at
aps.com/turnitin.

PUBLIC HOUSING

Telephone: (207) [REDACTED]

12. Apt 7 Email/Correo Electronica: X [REDACTED]

375

(P.O. BOX IS NEEDED-No postal delivery available at service address)

City: Maricopa State: AZ Zip Code 85139

Race/ Ethnicity: White: ☒ Hispanic: ☐ African Am.: ☐ Am. Indian: ☐ Asian/Pacific Islander: ☐
Other: _____

Turn on of Water Service – Customer, owner or designated representative must be present at time of Water Turn on.
Un representante debe estar presente en el momento de encender el agua.

Agreed Start date: 2/28/2014 Time Frame: _____

If the customer's valve is determined to be inaccessible or faulty, the meter will be turned off and the customer notified.
A new date and time frame must then be set with District staff to turn on services.

\$100.00 Deposit Total for the following:

\$20.00 Service Fee (Non Refundable)

\$80.00 Deposit (Refundable upon vacating with timely payments. If late 4x's within 1 yr., refunds made at Districts
discretion. If service is shut off 3x's in 6mo. there is a \$80 Service Reinstatement fee. All payments are due on the 20th each mo.)

I hereby apply for water service at the address above under the terms and rates approved by the Board
of Directors, and agree to pay for same as due.

Signature/F [REDACTED]

Date 2/13/2014

SERVICE INFORMATION: *Copy of Photo ID & copy of Pinal County Housing contract required.

Service start date 2-28-14

Account # 2130-CS

\$100.00 Deposit Total in the following:

Cash/Check

District Signature [REDACTED]

Deposit Date 2-27-14

MDWID is an Equal Opportunity provider and employer

Previous Balance of \$64.23 paid by applicant for Acct. 2130-07-GJ

Check #0018451. MDWID Rep. [REDACTED] Payment Received: 2/27/14

EXHIBIT W

Elizabeth A. Wentz

College of Liberal Arts and Sciences
Arizona State University
Tempe, AZ 85287-6505
wentz@asu.edu

Education

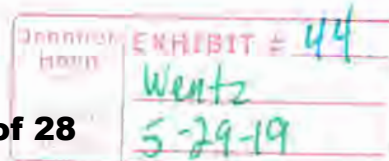
- 1997 Doctor of Philosophy, Geography, Pennsylvania State University
- 1989 Master of Arts, Geography, The Ohio State University
- 1987 Bachelor of Science with Honors, Mathematics, The Ohio State University

Academic Positions

- 2015 - Dean of Social Sciences, College of Liberal Arts and Sciences, Arizona State University
- 2018 - 2019 Interim Director, School of Transborder Studies, Arizona State University
- 2015 - Affiliate Faculty, School for the Future of Innovation in Society, Arizona State University
- 2014 - 2019 Associate Director, Institute for Social Science Research, Arizona State University
- 2013 - 2015 Director, School of Geographical Sciences and Urban Planning, Arizona State University
- 2012 - Professor, School of Geographical Sciences and Urban Planning, Arizona State University
- 2012 Visiting Professor, Laboratory of Geographic Information Systems (LASIG), École Polytechnique Fédérale de Lausanne, Switzerland
- 2010 - 2013 Associate Director, School of Geographical Sciences and Urban Planning, Arizona State University
- 2011 - Graduate Faculty, School of Sustainability, Arizona State University
- 2004 - 2011 Associate Professor, School of Geographical Sciences and Urban Planning, Arizona State University

January 2019

1



E. Wentz

1997 - 2003 Assistant Professor, Department of Geography, Arizona State University

1993 - 1997 Teaching Assistant, Research Assistant, and Instructor, Department of Geography, The Pennsylvania State University

1991 - 1992 Associate in Research, Organization for Tropical Studies, Duke University

1989 - 1991 Research Associate, Department of Natural Resources Science, The University of Rhode Island

1988 - 1989 Research Assistant, Department of Geography, The Ohio State University

1986 - 1988 College Intern, The Ohio Department of Natural Resources

Honors and Awards

2019 ASU's Faculty Women's Association for Outstanding Faculty Mentor Award

2017 Outstanding Doctoral Mentoring Award, The Graduate College, Arizona State University

2015 - 2016 Academy for Innovative Higher Education Leadership, Cohort 2

2015 Waldo Tobler Lecture for the Geographic Information Systems and Science Specialty Group of the Association of American Geographers

2013 ASU's Faculty Women's Association for Outstanding Faculty Mentors Award (nominated)

2012 ASU's Faculty Women's Association for Outstanding Faculty Mentors Award (nominated)

2010 Leaders Fellow, Office of the Provost, Arizona State University

2000 Faculty sponsor, College of Liberal Arts and Sciences, Brian Gratton, Professor of History

1997 Student Paper Award, Auto-Carto 13

Student Paper Award, Association of American Geographers Geographic Information Systems Specialty Group

1994 - 1995 Graduate Research Fellowship, Earth Systems Science Center, The Pennsylvania State University

- 1994 Student Paper Award, Association of American Geographers Geographic Information Systems Specialty Group
- 1993 Student Travel Award, National Center for Geographical Information and Analysis, GIS and Environmental Modeling Conference
- 1988 Student Travel Award, National Research Council, GIS in Geoscience Conference

Funded Research Proposals

- 2018-2023 The Knowledge Exchange for Resilience, Virginia G. Piper Charitable Trust, Elizabeth Wentz (PI), \$14,500,000
- 2018 – 2023 NSF ADVANCE grant, Elizabeth Wentz (PI), Monica Gaughan (Co-PI), Lenore Dai (Co-PI), Erika Camacho (Co-PI), Philip Regier (co-PI), National Science Foundation Award # 1824260, \$ 2,999,743
- 2018-2020 DCL: INCLUDES: Early Stage Empirical Research (EAGER): Data and the Future of an Empirically Grounded Research Community for Broadening Participation in STEM, Kimberly Scott (PI) and Elizabeth Wentz (co-PI), National Science Foundation Award # 1812428, \$299,707
- 2018 Phase I of the SEER Knowledge Exchange: Urban Heat and Utility Assistance, Virginia G. Piper Charitable Trust, Elizabeth Wentz (PI), \$500,000
- 2017-2021 Training and Retaining Leaders in STEM – Geospatial Sciences, National Science Foundation award to the University of Maine with Kate Beard (PI), Laxmi Ramasubramanian (co-PI), Barbara Battenfield (senior personnel), Sarah Battersby (senior personnel), Karen Kemp (senior personnel), and Elizabeth Wentz (senior personnel), \$358,301
- 2016-2019 GP-IMPACT: Geoscience-based workforce training and community preparedness for natural hazards, with Steven Semken and Patricia Gober, National Science Foundation, \$481,235.
- 2015-2018 Synthesis of LCLUC Studies on Urbanization: State of the Art, Gaps in Knowledge, and new Directions for Remote Sensing Science, with Karen Seto and Burak Güneralp, NASA, 13-LCLUC13-2-0012, 1/1/2015 – 12/31/2017, \$188,196
- 2013-2015 Innovation in the Measurement of Community Contextual Features. Scott Yabiku (PI), with Jennifer Glick, Dirgha Ghimire, and Elizabeth Wentz.

- 1R21HD073758-01A1. National Institute of Child Health and Human Development, 6/15/2013-3/31/2015, \$430,853
- 2012 - 2014 Evaluation of Drought Risks and its Impact on Agricultural Land and Water Use to Support Adaptive Decision-making, Co-PI, National Oceanic and Atmospheric Administration (NOAA), with Soe Myint PI, \$285,000
- 2010 - 2012 International workshop on geospatial solutions to analyze rapid urbanization, PI, NSF, \$45,000
- 2008 - 2012 Advancing watershed N management at the local level: Incorporating stream reach ecosystem N sinks into an environmental spatial decision support system, Co-PI, USDA - CSREES - National Integrated Water Quality Program, \$175,000
- 2006 - 2009 SEI(GEO): Visual Geo-Analytics, Co-PI, NSF, with Peter Wonka (CSE), Anshuman Razdan (DCS) and Elizabeth A. Wentz (Geography). \$623,361
- 2004 - 2011 Decision Center for a Desert City: Science and Policy of Climate Uncertainty, Science member, National Science Foundation, \$7,497,949
- 2004 Monitoring Human-Environment Interactions in a Controlled Landscaping Experiment, Co-PI, College of Liberal Arts and Sciences Multi-investigator grant, \$11,000
- 2004 - 2007 Investigation of Rapid Urbanization Processes Using ASTER, MODIS, and Landsat Data, Co-PI, NASA, \$782,225
- 2002 - 2007 Central Arizona – Phoenix, Long Term Ecological Research (CAP – LTER) Co-PI, National Science Foundation, \$819,990, October
- 2001 Reconstruction of Fire History Patterns in the Greater Phoenix Area, PI, College of Liberal Arts and Science Multi-investigator grant, \$16,140
- 2001 Phoenix: The Im/Migrant Nexus Co-PI, College of Liberal Arts and Science Multi-investigator grant, \$14,000
- 1999 The Arizona 20-20 Challenge, Co-PI, Arizona Office of Tourism, \$7,000
- 1999 - 2001 Dynamics of an Urban Carbon Dioxide Dome, Co-PI, National Science Foundation, \$498,367
- 1999 Development and Testing a Trivariate Shape Measure for use in Geographical Analysis, College of Liberal Arts and Science Travel Grant, Arizona State

University, \$830

1998 - 1999 Learning Physical Geography Through Interactive Laboratory Exercises,
College of Liberal Arts and Science, Arizona State University, \$11,631

Refereed Publications

Underlined names are graduate student co-authors

2019 Stoker, Philip, Heejun Chang, Britt Crow-Miller, Elizabeth Wentz, Gabrielle Jehle, Matthew Bonnett, Building water efficient cities: a comparative analysis of how the built environment influences water use in four Western U.S. cities, *Journal of the American Planning Association* (accepted).

2018 Wentz, Elizabeth A., Abigail M. York, Marina Alberti, Lindsey Conrow, Heather Fischer, Luis Inostroza, Claire Jantz, Steward TA Pickett, Karen C. Seto, and Hannes Taubenböck. Six fundamental aspects for conceptualizing multidimensional urban form: A spatial mapping perspective. *Landscape and Urban Planning* 179: 55-62.

Shimizu, Melinda, Elizabeth A. Wentz, Joanna Merson, D. Q. Kellogg, and Arthur J. Gold. Modeling anthropogenic nitrogen flow for the Niantic River catchment in coastal New England. *Landscape Ecology* 33 (8): 1385-1398.

Wentz, Elizabeth A., and Melinda Shimizu. Measuring spatial data fitness-for-use through multiple criteria decision making. *Annals of the American Association of Geographers*, 1-18.

Zhao, Qunshan, David Sailor, and Elizabeth A. Wentz. Impact of Tree Locations and Arrangements on Outdoor Microclimates and Human Thermal Comfort in an Urban Residential Environment *Urban Forestry & Urban Greening*

Conrow, Lindsey., Wentz., Elizabeth A., Nelson, Trisalyn., Pettit, Christopher. Comparing spatial patterns of crowdsourced and conventional bicycling datasets. *Applied Geography* 92C, pp 21-30
<https://doi.org/10.1016/j.apgeog.2018.01.009>

2017 Yabiku, Scott T, Jennifer Glick, Elizabeth A. Wentz, Dirgha J. Ghimire, and Qunshan Zhao. 2017. Comparing paper and tablet modes of retrospective activity space data collection. *Survey Research Methods* 11 (3): 329-344.

Chang, Heejun, Matthew Ryan Bonnette, Philip Stoker, Britt Crow-Miller, Elizabeth A. Wentz 2017. Determinants of single family residential water use

across scales in four western US cities *Science of the Total Environment* 596-597: 451-464.

Mack, Elizabeth A., and Elizabeth A. Wentz 2017. Industry variations in the broadband business nexus." *Socio-Economic Planning Sciences* 58: 51-62.

Zhao, Qunshan, Elizabeth A. Wentz, and Alan T. Murray. 2017. Tree shade coverage optimization in an urban residential environment." *Building and Environment* 115: 269-280 DOI: 10.1016/j.buildenv.2017.01.036

2016 Wagner, Melissa, Joanna Merson, and Elizabeth A. Wentz. "Design with Nature: Key lessons from McHarg's intrinsic suitability in the wake of Hurricane Sandy." *Landscape and Urban Planning* 155 (2016): 33-46.

Zhao, Qunshan and Elizabeth A. Wentz 2016, A MODIS/ASTER Airborne Simulator (MASTER) Imagery for Urban Heat Island Research, *Data*, 1(1), 7; doi:[10.3390/data1010007](https://doi.org/10.3390/data1010007)

Crow-Miller, Britt, Heejun Chang, Philip Stoker, Elizabeth A. Wentz, 2016, Facilitating Collaborative Urban Water Management through University-Utility Cooperation, *Sustainable Cities and Society* 475-483.

Wentz, Elizabeth A., Sandra Rode, Xiaoxiao Li, Elizabeth M. Tellman, B.L. Turner II, 2016, Impact of Homeowner Association (HOA) Landscape Guidelines on Residential Water Use, *Water Resources Research*

2015 Deitrick, Stephanie and Elizabeth A. Wentz, Developing Implicit Uncertainty Visualization Methods Motivated by Theories in Decision Science, *Annals of the Association of American Geographers*, 105(3), 531-551.

2014 Li, W., Chen, T., Wentz, E. A., & Fan, C., 2014, NMMI: A Mass Compactness Measure for Spatial Pattern Analysis of Areal Features. *Annals of the Association of American Geographers*, 104(6), 1116-1133.

Wentz, Elizabeth A., Angela J. Wills, Won Kyung Kim, Soe W. Myint, Patricia Gober, and Robert C. Balling Jr., 2014, Factors Influencing Water Consumption in Multifamily Housing in Tempe, Arizona. *The Professional Geographer*, 66(3): 501-510, DOI: 10.1080/00330124.2013.805627

Shimizu, Melinda, Randall S. Cerveney, Elizabeth A. Wentz, and Kevin E. McHugh, 2014, Geographic and Virtual Dissemination of an International Climatic Announcement. *Bulletin of the American Meteorological Society*.

Wentz, Elizabeth A., Sharolyn Anderson , Michail Fragkias , Maik Netzband,

- Victor Mesev , Soe W. Myint , Dale Quattrochi , Atiqur Rahman and Karen C. Seto , 2014, Supporting Global Environmental Change Research: A Review of Trends and Knowledge Gaps in Urban Remote Sensing, *Remote Sensing*, 6, 3879-3905; doi:10.3390/rs6053879
- 2013 Ouyang, Yun, Elizabeth A. Wentz, Benjamin L. Ruddell, Sharon L. Harlan, 2013, A Multi-Scale Analysis of Single-Family Residential Water Use in the Phoenix Metropolitan Area, *Journal of the American Water Resources Association*, DOI: 10.1111/jawr.12133
- Myint, Soe W., Elizabeth A. Wentz, Anthony Brazel, Dale Quattrochi, 2013, The impact of human-made features and natural landscapes on urban warming, *Landscape Ecology* 28(5):959-978, DOI: 10.1007/s10980-013-9868-y
- Talen, Emily, Eliot Allen, Amanda Bosse, Josh Ahmann, Julia Koschinsky, Elizabeth A. Wentz, and Luc Anselin, 2013, LEED-ND as an Urban Metric, *Landscape and Urban Planning* 119: 20-34
DOI:10.1016/j.landurbplan.2013.06.008
- Wentz, Elizabeth A., Angela J. Wills, Won Kyung Kim, Soe W. Myint, Patricia Gober, and Robert C. Balling, Jr., 2013, Factors Influencing Water Consumption in Multifamily Housing in Tempe Arizona, *The Professional Geographer* DOI:10.1080/00330124.2013.805627
- 2012 Wentz, Elizabeth A., Dale Quattrochi, Maik Netzband and Soe Myint 2012. Synthesizing urban remote sensing through application, scale, data and case studies, *Geocarto International*, DOI:10.1080/10106049.2012.687400
- 2011 Gober, Patricia, Elizabeth A. Wentz, Timothy Lant, Michael Tschudi, and Craig Kirkwood 2011. WaterSim: A Simulation Model for Urban Water Planning in Phoenix, Arizona, USA *Environmental and Planning B* doi:10.1068/b36075
- 2010 Wentz, Elizabeth A., Donna J. Peuquet, Sharolyn Anderson 2010. An ensemble approach to space-time interpolation. *International Journal of Geographical Information Science* 24(9): 1309-1325
- Garrity, Colleen M., Randall S. Cerveney, and Elizabeth A. Wentz, 2010. Vertical moisture profile characteristics of severe surface drought and surface wetness in the western United States: 1973-2002. *International Journal of Climatology* 30: 894-900. DOI: 10.1002/joc.1944
- Lee, Seung-Jae, Elizabeth A. Wentz, and Patricia Gober 2010. Temporal Geographic Information Systems (TGIS) to Forecast Future Water

Consumption in Phoenix, Arizona *Journal of Stochastic Environmental Research and Risk Assessment* DOI 10.1007/s00477-009-0317-z.

- 2009 Karnick, Pushpak, David Cline, Anshuman Razdan, Elizabeth A. Wentz, and Peter Wonka 2009. A Shape Grammar for Developing Glyph-based Visualizations, *Computer Graphics Forum* 28(8): 2176-2188
- Ruddell, Darren and Elizabeth A. Wentz 2009. Multi-tasking: scale in geography *Compass Geography* DOI: 10.1111/j.1749-8198.2008.00206.x
- Yabiku, Scott T., Jennifer E. Glick, Elizabeth A. Wentz, Steven A. Haas, and Li Zhu 2009. Migration, health, and environment in the desert southwest. *Population Environment* 30(4): 131-158.
- Harms, Tamara K., Elizabeth A. Wentz, and Nancy B. Grimm 2009. Spatial heterogeneity of denitrification in semi-arid floodplains *Ecosystems* 12 (1): 129-143. DOI: 10.1007/s10021-008-9212-6
- 2008 Wentz, Elizabeth A., David Nelson, Atiqur Rahman, William L. Stefanov, Shoursaseni Sen Roy 2008. Expert system classification of urban land use/cover for Delhi, India *International Journal of Remote Sensing* 29 (15): 4405-4427.
- Williams, Emily A. and Elizabeth A. Wentz 2008. Pattern Analysis based on Type, Orientation, Size, and Shape *Geographical Analysis* 40(2): 97 – 122.
- Walker, Jason, Robert C. Balling, Jr. John M. Briggs, Madhusudan Katti, Paige S. Warren, and Elizabeth A. Wentz 2008. Birds of a feather: interpolating distribution patterns of urban birds. *Computers, Environment, and Urban Systems* 32(1): 19-28.
- Lee, Seung-Jae and Elizabeth A. Wentz. 2008. Applying Bayesian Maximum Entropy to Extrapolating Local-Scale Water Consumption in Maricopa County, Arizona. *Water Resources Research* 44(1): W01401, doi:10.1029/2007WR006101, 2008.
- 2007 Myint, Soe, Elizabeth A. Wentz, and Sam Purkis 2007. Is Getis index more effective than spatial autocorrelation in detecting spatial pattern? A case study of an urban land use and land cover mapping. *Photogrammetric Engineering and Remote Sensing* 73(12): 1403-1415.
- Wentz, Elizabeth A. and Patricia Gober 2007. Factors Influencing Water Consumption for the City of Phoenix, Arizona, *Water Resources Management* 21(11): 1849-1863.

- Edsall, Robert M. and Elizabeth A. Wentz 2007. Comparing strategies for active learning in introductory undergraduate geography courses: physical models vs. computer visualization. *Journal of Geography in Higher Education* 31(3): 427-444.
- DiBiase, David, Michael DeMers, Ann Johnson, Karen Kemp, Ann Taylor Luck, Brandon Plewe, and Elizabeth Wentz 2007. Introducing the First Edition of Geographic Information Science and Technology Body of Knowledge, *Cartography and Geographic Information Science* 34(2) 113-120.
- Keys, Eric, Elizabeth A. Wentz, Charles Redman 2007. The spatial structure of land use from 1970-2000 in the Phoenix, Arizona metropolitan area. *Professional Geographer* 59(1): 131-147.
- 2006 Wentz, Elizabeth A. 2006. Cognitive models of space *Encyclopedia of Human Geography*, Barney Warf (ed), Sage Publications, Inc, p 44-46
- Wentz, Elizabeth A., William Stefanov, Corinna Gries, Diane Hope 2006. A comparison of land use and land cover mapping approaches in an arid urban environment. *Computers, Environment, and Urban Systems* 30(3): 320-346.
- 2004 Koerner, Brenda, Elizabeth A. Wentz, and Robert Balling, Jr. 2004. Projected carbon dioxide (CO₂) for the year 2020 in Phoenix, Arizona. *Environmental Management* 33 Supplement: S222-S228.
- 2003 Miller, Harvey and Elizabeth A. Wentz 2003. Geographic Representation in Geographic Information Systems and Spatial Analysis. *Annals of the Association of American Geographers* 93(3) 574-594.
- Wentz, Elizabeth A., Aimee F. Campbell, Robert Houston 2003. Implementing and testing two methods of spatio-temporal data interpolation applied to tracking the movement of monkeys. *International Journal of Geographical Information Science* 17(7): 623 – 645.
- 2002 Day, Thomas A., Patricia Gober, Fusheng S. Xiong, and Elizabeth A. Wentz 2002. Temporal patterns in near-surface CO₂ concentrations over contrasting vegetation types in the Phoenix metropolitan area. *Agricultural and Forest Meteorology* 110(3): 229-245.
- Wentz, Elizabeth A., Patricia Gober, Robert C. Balling, Jr., Thomas Day 2002. Spatial Patterns and Determinants of Carbon Dioxide in an Urban Environment *The Annals of the Association of American Geographers*

92(1): 15-28.

- 2001 Wentz, Elizabeth A., Brandon J. Vogt, and Michael Kuby 2001. Use of geographic information systems for extraction of peak and canyon locations in the State of Arizona. *Cartography and Geographic Information Science*. 28(4): 259-271.
- Kuby, Michael, Elizabeth A. Wentz, Brandon J. Vogt, and Randall Virden 2001. The Arizona 20-20 Challenge. *Tourism Geographies*. 3(4):454-473.
- Wentz, Elizabeth A. and Barbara Trapido-Lurie 2001. Structured Internships in Geographic Information Science Education. *Journal of Geography* 100(4): 140-144.
- 2000 Wentz, Elizabeth A. 2000. Development and Testing of a Trivariate Shape Measure for Geographic Analysis *Geographical Analysis* 32(2): 95-112.
- 1999 Wentz, Elizabeth A., JoAnn C. Vendor, and Cynthia A Brewer 1999. An Evaluation of Teaching Introductory Geography using Computer-based Tools. *Journal of Geography in Higher Education* 23(2) 167-179.

Book

- 2013 Wentz, Elizabeth A. 2013. How to design and write a dissertation research proposal. Sage Publications

Edited Books

- 2017 Quattrochi, Dale A., Elizabeth Wentz, Nina Siu-Ngan Lam, and Charles W. Emerson, eds. *Integrating Scale in Remote Sensing and GIS*. CRC Press, 2017.
- 2006 DiBiase, D., M. DeMers, A. Johnson, K. Kemp, A. Luck, B. Plewe, and E. Wentz, (editors), 2006. *Geographic Information Science and Technology Body of Knowledge*, 1st Ed. University Consortium for Geographic Information Science. Washington, DC: Association of American Geographers.
- 2005 Moeller, Matthias and Elizabeth A. Wentz (editors) 2005. *Proceedings of the ISPRS WG VII/I "Human Settlements and Impact Analysis" 3rd International Symposium Remote Sensing and Data Fusion Over Urban Areas (URBAN 2005) and 5th International Symposium Remote Sensing of Urban Areas (URS 2005)*. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. March 14-16, 2005, Tempe, Arizona, USA

Refereed Book Chapters and Conference Proceedings

- 2018 and 2019 **Chapters with Pettit**
- 2016 Myint, S.W., Mesev, V., Quattrochi, D. and Wentz, E.A. 2016. Urban image classification: per-pixel classifiers, sub-pixel analysis, object-based image analysis, and geospatial methods. In P. Thenkabil (Ed) *Remotely Sensed Data Characterization, Classification, and Accuracies*. Boca Raton: Taylor & Francis, 219–230
- 2015 Wentz, Elizabeth A. and Qunshan Zhao, Assessing Validation Methods for Building Identification and Extraction, *Joint Urban Remote Sensing Event (JURSE)*, Lausanne Switzerland
- 2012 Larson, Kelli L., Dorothy C. Ibes, and Elizabeth A. Wentz. Identifying the water conservation potential of neighborhoods in Phoenix, AZ: an integrated socio-spatial approach. In *Geospatial Approaches to Urban Water Resources*. Ed., P. Lawrence. Springer Series Geotechnologies and the Environment: Planning and Socioeconomic Applications, 39 pp.
- 2009 Elizabeth A. Wentz, William L. Stefanov, Matthias Möller, Maik Netzband, and Anthony Brazel 2009. The Urban Environmental Modeling (UEM) Project 100 Cities: the legacy of the first phase and next steps. *Global Mapping of Human Settlement: Experiences, Data sets, and Prospects*. P. Gamba and M. Herold (editors) Taylor & Francis
- 1994 Peuquet, Donna J. and Elizabeth A. Wentz 1994. An Approach for Time-Based Analysis of Spatiotemporal Data, *Advances in GIS Research* 1:489-504.

Non-refereed Publications

- 2017 Wentz, Elizabeth A., Britt Crow-Miller, Heejun Chang, and Philip Stoker, Moving beyond the case study to understand how and why cities function, *Parameters*, Social Science Research Council, August 23, 2017.
- 2013 Arnold, C., D. Kellogg, K. Forshay, C. Damon, E. Wilson, A. Gold, E. Wentz, and M. Shimizu. Tracking the fate of watershed nitrogen: The “N-Sink” Web Tool and Two Case Studies. U.S. Environmental Protection Agency, Washington, DC, EPA/600/R-13/230, 2013.
- 2011 Wentz, Elizabeth A., Karen Seto, Maik Netzband, Michail Fragkakis, Soe Myint, Urban Remote Sensing (URS) and Forecasting Urban Landuse (FORE) workshops: common ground and targeted opportunities, *Viewpoints VI*

- Dell'Acqua, Fabio, Elizabeth A. Wentz, Soe Myint and Maik Netzband, Urban areas: states-of-the-art in remote sensing and forecasting growth meet in a joint workshop at Arizona State University, *Earthzine*, <http://www.earthzine.org/2011/09/30/understanding-the-drivers-and-consequences-of-global-urbanization-using-emerging-remote-sensing-technologies/>
- 2009 Wentz, Elizabeth A. 2009. Harvey J. Miller in *Encyclopedia of Geography*, Barney Warf (ed). Sage Publications, Inc.
- 2007 Ruddell, Darren and Elizabeth A. Wentz 2007. Scale; Population; and Spatial Analysis: A Methodological Investigation, *Proceedings of the 15th ACM International Symposium on Advances in Geographic Information Systems (ACM GIS 2007)*, Seattle WA, November 2007.
- Wentz, Elizabeth A. 2007. Structural Analysis of Land Use Pattern in Delhi India. Proceedings for the 32nd International Symposium on Remote Sensing of Environment. Sustainable Development Through Global Earth Observations, June 25 – 29, 2007, San Jose, Costa Rica
- 2005 Netzband, Maik, Elizabeth A. Wentz, and Atiqur Rahman 2005. Urban land cover and spatial variation observation using satellite image data – the urban environmental monitoring project. Proceedings of the XXVIIIth URSI General Assembly, New Delhi India, October 2005.
- Cole, Christopher, Elizabeth Wentz and Philip Christensen 2005. Expert system approach for classifying land cover in New Delhi India using ASTER imagery. *Proceedings of the ISPRS WG VII/I "Human Settlements and Impact Analysis" 3rd International Symposium Remote Sensing and Data Fusion Over Urban Areas (URBAN 2005) and 5th International Symposium Remote Sensing of Urban Areas (URS 2005)*. The International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences. March 14-16, 2005, Tempe, Arizona, USA
- 2003 Wentz, Elizabeth A. 2003. Review of Modelling Scale in Geographical Information Science, N. Tate and Atkinson (eds) *Geographical Analysis* 35(2):177-178.
- 2002 Wentz, Elizabeth A. 2002. Review of Getting Started with Geographic Information Systems Third Edition Keith Clarke *International Journal of Geographical Information Science* 16(2): 204-205.
- 2001 Wentz, Elizabeth, Sharolyn Anderson, William L. Stefanov, and John Briggs

2001. Desert Fire History and Effects on the Phoenix, Arizona, Metropolitan Area. IEEE/ISPRS Joint Workshop on Remote Sensing and Data Fusion over Urban Areas, University of Rome La Sapienza, November 8-9, 2001, 154-158.
- 2000 Hepner, George, Carolyn Merry, Dawn Wright, Elizabeth Wentz, Sharolyn Anderson, Amy Budge 2000. Remotely Acquired Data and Information in GIScience. UCGIS Research Initiative.
- 1999 Burns, Elizabeth K. and Elizabeth A. Wentz 1999. Progress Toward Integrating Spatial Technologies for Urban Infrastructure Management ACSM Proceedings.
- 1998 Wentz, Elizabeth A. and Joseph A. Bishop 1998. Geographic Information System and Database Management at a Tropical Rainforest Research Station Republished in *GIS Methodologies for Developing Conservation Strategies*, 1998, Basil G. Savitsky and Thomas E. Lacher Jr. (eds), Columbia University Press, New York, 83-95
- 1997 Brewer, Cynthia A. and Elizabeth A. Wentz 1997. A Simplified GIS Interface for Learning Introductory Geomorphology, *Geocal*, 16: 6-10.
- Wentz, Elizabeth A. 1997. Shape Analysis and GIS. *Auto-Carto 13*, 204-213.
- 1996 Wentz, Elizabeth A. 1996. Book review of *Innovations in GIS* Michael F. Worboys (ed.) 1994. In *Annals of the Association of American Geographers* 86:376-377.
- 1995 Wentz, Elizabeth A. and Joseph A. Bishop 1995. Geographic Information System and Database Management at a Tropical Rainforest Research Station. *Biology International* 30:10-19.
- 1993 Campbell, Aimee F. and Elizabeth A. Wentz 1993. Monkeying Around with ARC/INFO: GIS Methods in the Study of Primate Ecology and Conservation, *ARCNews Redlands, CA: Environmental Systems Research Institute, Inc.* Reprinted in *Liana Durham, NC: Organization for Tropical Studies*.
- Wentz, Elizabeth A. and Marco Vinicio Castro Campos 1993. Management of Research Areas at a Biological Field Station, in *Proceedings of the Thirteenth Annual ESRI User Conference*, Redlands, CA: Environmental Systems Research Institute, Inc., Vol. 1, 303-314.
- 1992 Castro Campos, Marco Vinicio and Elizabeth A. Bishop (Wentz) 1992.

Geographic Information Systems in Tropical Rain Forest Research, in *ARC/INFO Maps 1992*, Redlands, CA: Environmental Systems Research Institute, Inc., 75.

- 1991 Hale, Stephen and Elizabeth (Wentz) Bishop 1991. Managing an Estuarine Data Base with DBMS and a GIS, in *RIGIS News*.
- Smith, Suzanne and Elizabeth (Wentz) Bishop 1991. ARC/INFO and the Mac, *RIGIS News*.
- Bishop (Wentz), Elizabeth A. 1991. The World Prodigy Oil Spill, Rhode Island, in *ARC/INFO Maps 1990*, 58.
- 1990 August, Peter, Stephen Hale, Elizabeth A. (Wentz) Bishop and Eric Sheffer 1990. The Contributions of GIS Technology to Environmental Disaster Management - A Case Study of the World Prodigy Oil Spill, Rhode Island, in *Proceedings, Oil Spills Management and Legislative Implications*, edited by Malcolm L. Spaulding and Mark Reed, 366-374. Newport, RI: American Society of Civil Engineers. Reprinted in *Proceedings NCGS '90*, 91-98. Houston, TX.
- 1989 Marble, Duane F. and Elizabeth A. Wentz 1989. Standardized Benchmarks for Geographic Information Systems: A Progress Report, in *ARC/INFO User Conference Proceedings*: Redlands, CA: Environmental Systems Research Institute, Inc., 1-10.

Journal Editor

- 2010 - 2011 *Geographical Analysis*, Guest editor for a Special Issue on Water
- 2006 - 2009 *Geography Compass*, GIS section editor

Editorial Board

- 2016- *Urban Science*
- 2013 - *The AAG Review of Books*
- 2012 - 2017 *Transactions in GIS*
- 2009 - *International Regional Science Review*
- 2003 - *Geographical Analysis*, Associate Editor

Journal Reviewer

- 2015 *Environmental Monitoring and Assessment*
- 2013 *Remote Sensing*
- 2012 *Water Policy*

January 2019

2011	<i>Landscape and Urban Planning</i>
	<i>Environment and Planning B</i>
2010	<i>Water Resources Research</i>
2009	<i>Journal of the American Water Resources Association</i>
	<i>Physical Geography</i>
2008	<i>Environmental Management</i>
	<i>The Canadian Geographer</i>
	<i>Obesity</i>
	<i>Land Use Policy</i>
	<i>Geoinformatica</i>
	<i>Water Resources Management</i>
2006	<i>Geographical Review</i>
	<i>Computers and Geosciences</i>
	<i>International Journal of Climatology</i>
	<i>Transactions in GIS</i>
2005	<i>Regional Environmental Change</i>
	<i>Ecology and Society</i>
	<i>Cartography and Geographic Information Science</i>
2004	<i>Urban Ecosystems</i>
2003	<i>International Journal of Remote Sensing</i>
	<i>The Professional Geographer</i>
	<i>The Annals of the Association of American Geographers</i>
	<i>Computers, Environment, and Urban Systems</i>
2001	<i>Journal of Geographical Systems</i>
2000	<i>Geographical Analysis</i>
	<i>IEEE Computer Society Transaction on Knowledge and Data Engineering</i>
1999	<i>International Journal of Geographical Information Science</i>

Invited Panel

2016	Presidential Plenary, Disruptive Forces in Higher Education (Member) The Association of American Geographers, San Francisco CA
	GIS Specialty Group, Panel on Space Time Analysis (Member), The Association of American Geographers, San Francisco CA
2015	Research Panel, University Consortium for Geographical Information Science, Symposium, Arlington VA

Invited Research Presentations

2019	Knowledge Exchange for Resilience: A Case for Science to Solutions, Department of Geography, Pennsylvania State University
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January 2019

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E. Wentz

- 2018 Science to Solutions through a Knowledge Exchange, Pacific Ridge to Reef, Hilo, Hawaii
- 2016 Impact of Homeowner Association (HOA) Landscaping Guidelines on Residential Water Use, Department of Geography, University of Arizona
- 2015 Untangling urban water demand through the lens of GIScience, Association of American Geographers, The Waldo Tobler Distinguished Lecture, Geographic Information Systems and Science Specialty Group
- Scale issues in urban water demand, Portland State University Department of Geography, Portland, Oregon
- 2013 Buildings and Trees, Salt River Project Sustainability and Innovation, Phoenix, Arizona
- 2012 Urban adaptation to climate change: water and energy in a desert city, Laboratory of Geographic Information Systems (LASIG), École Polytechnique Fédérale de Lausanne, Switzerland
- Urban environmental tradeoffs: water and energy in a desert city, Department of Geography, University of Zurich
- 2011 Urban Remote Sensing Workshop Outcomes, Department of Atmospheric Sciences, University of Alabama and NASA, Huntsville AL
- Urban Remote Sensing – Theory and Practice, School of Forestry and Environmental Studies, Yale University
- Urban Remote Sensing – Land use classification, Department of Geography and Planning, University of Saskatchewan, Canada
- 2010 Computational spatial analysis techniques for better understanding urban water demand, Department of Geography, Rutgers University
- The Urban Environmental Monitoring Project: 100 cities School of Geographical Sciences and Urban Planning, Arizona State University
- 2009 Computational spatial analysis techniques for better understanding urban water demand, Department of Geography, University of California – Los Angeles

- 2008 Geographic pattern analysis: an exploration of methodological, applied, and theoretical problems, Department of Geography, University of Texas – Austin
- Geographic pattern analysis: an exploration of methodological, applied, and theoretical problems, School of Human Evolution and Social Change, Arizona State University
- The Urban Environmental Monitoring Project: 100 cities Department of Geography, University of Mexico
- The Urban Environmental Monitoring Project: 100 cities Department of Geography, Florida State University
- 2007 Geographic pattern analysis: an exploration of methodological, applied, and theoretical problems Department of Geography, University of Arizona
- 2006 Factors Influencing Residential Water Consumption, Decision Center for a Desert City Water Briefing, Arizona State University
- 2004 Implementing and testing two methods of spatio-temporal data interpolation applied to tracking the movement of monkeys, Cognitive Systems and Behavior Seminar Series, Arizona State University
- 2003 Atmospheric Carbon Dioxide in an Urban Environment Department of Geological Sciences, Arizona State University
- 2002 GIS Research Opportunities in Health, Department of Exercise and Wellness, Arizona State University East
- 2001 Implementing and testing two methods of spatio-temporal data interpolation applied to tracking the movement of monkeys, Department of Geography, University of Colorado – Boulder
- Implementing and testing two methods of spatio-temporal data interpolation applied to tracking the movement of monkeys, Department of Geology, University of Mississippi, Oxford, MS
- Implementing and testing two methods of spatio-temporal data interpolation applied to tracking the movement of monkeys, Cognitive Systems and Behavior Seminar Series, Department of Environmental Fluid Dynamics, Arizona State University
- 2000 GIS research and teaching from a North American perspective,

Department of Geography, University of Oslo, Norway

- 1999 Development of techniques for spatio-temporal data interpolation,
Department of Geography, University of Utrecht, The Netherlands
- Shape Analysis and GIS, Department of Geography, University of Utah
- 1998 Shape Analysis and GIS, Department of Fluid Dynamics, Arizona State
University November 1998
- Shape Analysis and GIS, Department of Geography, University of Arizona
- 1990 Exploring Pattern in Complex Multidimensional Environmental Datasets,
Department of Natural Resources Science, University of Rhode Island
- GIS and Environmental Disaster Management: *World Prodigy* Oil Spill,
Department of Geography, The Ohio State University
- GIS and Environmental Disaster Management: *World Prodigy* Oil Spill,
Emergency Response Workshop, Innovative Emergency Management,
Inc.

Conference Presentations

- 2017 Stoker, P., Chang, H., Wentz, E., Crow-Miller, B., Bonnette, M., Jehle, G.
Building water efficient cities. Association of Collegiate Schools of Planning,
Denver, CO.
- 2015 Assessing Tropical Storm Vulnerability in an Inland Desert: A Case Study of the
2014 Flash Flood Events in Phoenix, Arizona, Association of American
Geographers, Chicago IL, with Melissa Wagner and Scott Kelley
- 2013 Small area urban environmental indicators of energy-water dynamics in a
desert city, Association of American Geographers, Los Angeles CA, with
Chao Fan
- 2011 Space-time interpolation of land cover for Phoenix Arizona, Association of
American Geographers, Seattle WA, with Sharolyn Anderson and Donna
Peuquet
- Panel in honor of Dr. Duane Marble, Association of American Geographers,
Sponsored by AAG, Geographic Information Science and Systems Specialty
Group, Spatial Analysis and Modeling Specialty Group, Esri and University
Consortium for Geographic Information Science, organized with May Yuan

January 2019

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E. Wentz

- 2010 The impact of detailed land-cover categories on urban warming
American Society for Photogrammetry and Remote Sensing
(ASPRS) Soe Myint (presenter) and Anthony Brazel

Outdoor water consumption and the impact on the urban heat island
in Phoenix Arizona Association of American Geographers
- 2008 Geographic pattern analysis: an exploration of applied,
methodological, and theoretical problems Association of
American Geographers

Migration, Health, and Environment in the Desert Southwest, Yabiku, Scott T.,
Jennifer E. Glick, Steven Haas, and Lu Zhu, Population Association of
America

The interface between cartography and remote sensing, Robert Edsall and
Aileen Buckley, American Association for Photogrammetry and Remote
Sensing (ASPRS)
- 2007 The fractal dimension of land use and land cover in Phoenix, Arizona American
Society for Photogrammetry and Remote Sensing (ASPRS) Southwest
Region Technical Meeting, Sharolyn Anderson and Claudio Delriux
- 2006 Factors Influencing Water Consumption for the City of Phoenix, Arizona,
Association of American Geographers
- 2004 Polygon Pattern Analysis based on Type, Orientation, Shape, and Size,
GIScience
- 2003 Projected carbon dioxide (CO₂) for the year 2020 in Phoenix, Arizona,
Association of American Geographers
- 2002 Science Model Curriculum and the ASU Curriculum, University Consortium for
Geographic Information

Science Model Curriculum and the ASU Curriculum, Arizona Geographic
Information Council Annual Meeting
- 2002 GIS Applications for Open Space Planning and Acquisition, APRA Open Space
Conference
- 2001 Desert Fire History and Effects on the Phoenix, Arizona, Metropolitan Area,
IEEE/ISPRS Joint Workshop on Remote Sensing and Data Fusion over
Urban Areas, University of Rome La Sapienza.

	Spatial Patterns and Determinants of Carbon Dioxide in an Urban Environment, Association of American Geographers
2000	Implementing and testing two methods of spatio-temporal data interpolation applied to tracking the movement of monkeys, GIScience
1999	The Role of Internships in GIS Education, Association of American Geographers
	Teaching Concepts of Physical Geography with GIS-based tools, Association of American Geographers
1998	Challenges in GIS Education, Arizona Pacific Coast Geographers Annual Meeting
	Challenges in GIS Education, Arizona Geographic Information Council (AGIC) Annual Meeting August 1998
	Teaching Concepts of Physical Geography with GIS-based tools, Geographic Alliance GeoFest
	GIS User Interface Design for Applications in Archaeology, Association of American Geographers
1997	Shape Analysis and GIS, Auto-Carto 13, Seattle, Washington
	Advancing the Analytical Capabilities of GIS, Association of American Geographers
	Student Use of Simplified GIS Interface for Learning Introductory Geomorphology, Association of American Geographers, Cynthia Brewer and JoAnn Vender
1994	An Approach for Time-Based Analysis of Spatiotemporal Data, Sixth International Symposium on Spatial Data Handling, Donna Peuquet
	Space, Shape, and Time: The shape of things to come, Association of American Geographers
1992	GIS and Research in Tropical Biology, International Union of Biological Sciences, La Selva, Costa Rica
1990	GIS and Research in Tropical Biology, Organization of Biological Field Stations,
January 2019	

La Selva, Costa Rica

GIS and Environmental Disaster Management: *World Prodigy Oil Spill*,
National Computer Graphics Association

GIS and Management of the Narragansett Bay American Society for
Photogrammetry and Remote Sensing (ASPRS) New England Chapter

Poster Presentations

- 2019 655 Developing Utility Assistance Community Resilience Networks in Maricopa County
Wei Luo, Arizona State Univ., Tempe, AZ; and Q. Zhao, H. Fischer, P. Solis, and E. Wentz
- 650 Community Resilience in Maricopa County, Arizona, USA: The Analysis of Indoor Heat-Related Death and Urban Thermal Environment
Qunshan Zhao, Arizona State Univ., Tempe, AZ; and H. Fischer, W. Luo, P. Solis, and E. Wentz
- 651 Mapping Heat Vulnerability in Maricopa County, Arizona, with the HeatMappers Volunteer Science Program
Grace Valandra, Xavier College Preparatory, Phoenix, AZ; and H. Fischer, P. Solis, Q. Zhao, E. Wentz, and C. Higgins
- 652 ActivityLog-HeatMappers: A Novel Research Data Collection Tool for Logging Activities, Locations, and Environment Data
Ziqi Li, Arizona State Univ., Tempe, AZ; and Q. Zhao, H. Fischer, P. Solis, and E. Wentz
- 655 Developing Utility Assistance Community Resilience Networks in Maricopa County
Wei Luo, Arizona State Univ., Tempe, AZ; and Q. Zhao, H. Fischer, P. Solis, and E. Wentz
- 2014 Hurricane Sandy through the Lens of Ian McHarg, Association of Collegiate Schools of Planning, October 2014, with Melissa Wagner
- Investigating the Impact of Homeowner Association Landscape Guidelines on Residential Water Use, CAP LTER, with Sandra Rode, Elizabeth A. Wentz, Xiaoxiao Li, Billie L. Turner II
- 2011 Classifying Urban Land cover using Spatial Weights: A Comparison of Discriminant Analysis and Markov Random Fields, American Geophysical Union annual meeting, December 2011, with Yang Song

- 2008 The Use of GIS as a Decision-Support Tool by Water Managers in Phoenix, Arizona, Arizona State University CAP – LTER, with J. Howard, K. Larson, and D. White
- Spatial Extrapolation Mapping Based on Aggregated Data: Countywide Extrapolation of Phoenix Water Use Data Arizona State University CAP – LTER, with S. J. Lee
- 2008 Temporal Geographic Information Systems (TGIS) to Forecast Future Water Consumption in Phoenix, Arizona Arizona State University CAP – LTER, with S.J. Lee, and P. Gober
- 2007 Scale; Population; and Spatial Analysis: A Methodological Investigation 15th ACM International Symposium on Advances in Geographic Information Systems, with Darren Ruddell
- Structural Analysis of Land Use Pattern in Delhi India Symposium on Remote Sensing of Environmental Sustainable Development Through Global Earth Observations San Jose, Costa Rica
- 2006 Defining pattern for data mining and spatial data analysis, Auto-carto
- A spatial decision support tool for regional water managers: scenarios for predicting residential water consumption Decision Support Systems Symposium
- Classifying land cover in New Delhi India using ASTER imagery, Annual Meeting of the Association of American Geographers
- Factors Influencing Water Consumption for the City of Phoenix, Arizona , Arizona State University CAP-LTER
- 2005 Expert system approach for classifying land cover in New Delhi India using ASTER imagery 3rd International Symposium Remote Sensing and Data Fusion Over Urban Areas (URBAN 2005) and 5th International Symposium Remote Sensing of Urban Areas (URS 2005)
- 2002 Desert Fire History and Effects on the Phoenix, Arizona, Metropolitan Area Arizona State University CAP-LTER
- 2000 Use of geographic information systems for extracting peaks and canyons, Annual meeting of the Association of American Geographers

1998 Progress toward Integrating Spatial Technologies for Urban Infrastructure Management, Arizona Geographic Information Council Annual Conference, Arizona State University

International and National Service Activities

2015 - Proposal reviewer for Austrian Science Fund

2014-2015 Technical Committee for the Joint Urban Remote Sensing Event 2015 (JURSE) in Lausanne Switzerland

2014-2017 Executive Committee of the University Consortium for Geographic Information Science (Present-Elect, President, Past-President)

2013 - Board of Trustees, Marble Fund, Association of American Geographers (AAG)

2012 - 2013 Scientific committee, Joint Workshop on Remote Sensing and Data Fusion over Urban Areas (URBAN) and the Workshop on Remote Sensing of Urban and Suburban Areas' (URS), Sao Paulo, Brazil, 2013

2012 - 2015 National council member, Chair of the National Councilors (2013-2015), Association of American Geographers (AAG)

2012 Scientific review committee, Open Geospatial Research and Education Symposium, 2012, Yverdon-les-Bains, Switzerland

2011 Program committee, Space-time Symposium, Association of American Geographers (AAG)

Proposal review, Israeli Science Foundation

2010 Proposal review, Water Resources Research Institute

Proposal review, National Institutes of Health (NIH)

2010 - 2011 Program committee, Joint Urban Remote Sensing Event (JURSE), Munich, Germany

2009 Program review, Department of Geography, Rowan University

2009 - 2011 Regional director, Southwest Region of the American Society of Photogrammetry and Remote Sensing (ASPRS)

2008 Nominating committee, Association of American Geographers (AAG)

January 2019

23

E. Wentz

- 2008 - Program committee, Association for Computing Machinery, International Symposium on Advances in Geographic Information Systems (SIG SPATIAL)
- 2008 - 2013 Chair of the review committee, Marble-Boyle Undergraduate Award, Association of American Geographers
- 2008 Student chapter liaison, American Society of Photogrammetry and Remote Sensing
- 2007 - 2008 Conference planning committee, Auto-Carto
- 2005 - 2008 Board member, Cartography and Geographic Information Society
- 2005 - 2008 Vice chair, Chair, Past chair, Association of American Geographers Geographic Information Systems and Science Specialty Group
- 2004 - 2006 GIS Education Services, Board of Directors
- 2004 - 2005 Secretary, University Consortium for Geographic Information Science
- 2003 - Proposal reviewer, National Science Foundation (NSF)
- 1999 Board member, Board member for *Discovering Geographic Knowledge in Data-Rich Environments*, NCGIA-Varenus Specialist Meeting
- 1998 - 2008 Member, GIS Core Curriculum Group, University Consortium for Geographic Information Science (UCGIS)
- 1998 Reviewer for Thirty-Second Annual Hawai'i International, Conference on System Sciences Minitrack on "GIS and Decision Support"
- 1993 - 1994 Graduate student representative, Association of American Geographers, Geographic Information Systems Specialty Group

University Service

- 2017 - ASU representative, Social Science Research Council (SSRC)
- 2016 - Chair, PLuS Alliance fellows, ASU
- 2014 -2015 Member, College of Liberal Arts and Sciences Dean's Advisory Council

2014 - 2016 Member, ASU Bicycle Advisory Committee

2014 Committee member, Search committee for the Dean of the College of Liberal Arts and Sciences, Arizona State University

2010 - 2011 Interim Director, Master of Advanced Study in Geographic Information Systems, School of Geographical Sciences and Urban Planning, Arizona State University

2007 - 2014 Undergraduate advising, Decision Center for a Desert City

2008 - Executive Committee, GeoDa Center, School of Geographical Sciences and Urban Planning, Arizona State University

2009 - 2010 Executive Committee, School of Geographical Sciences and Urban Planning, Arizona State University

2008 Proposal Reviewer, Institute For Social Science Research, College of Liberal Arts and Sciences, Arizona State University

2007 - 2008 Search Committee Member, University Library Geospatial Data Analyst, Arizona State University

2007 - Executive Committee, Information Science Certificate, Arizona State University

2007 - 2011 Faculty Mentor, Prof. Kelli Larson, Arizona State University

2006 - 2007 Director, Transdisciplinary Center for GIScience, School of Geographical Sciences, Arizona State University

2006 - Director, Geographic Information Science Graduate Certificate, Arizona State University

2005 - 2006 Faculty Mentor, Prof. Markus Janssen, Arizona State University

2004 - 2009 Executive Committee, Decision Center for a Desert City, Arizona State University

2004 - 2009 Faculty Sponsor, Supporting Women in Geography, School of Geographical Sciences and Urban Planning, Arizona State University

2002 - Executive Committee, Geographic Information Science Graduate Certificate, Arizona State University

1988 - 1989 Graduate Student Representative, Department of Geography, The Ohio State

University

Graduate Student Committee Chair

In progress	Elisha Charley, PhD Jonathan Davis, PhD, co-chair with David Pijawka
2018	Lindsey Conrow, PhD
2017	Qunshan Zhao, PhD Heather Fisher, PhD
2014	Melinda Shimizu, PhD
2013	Yun Ouyang, PhD, School of Sustainability, co-chair with Benjamin Ruddell Joanna Merson, MA Stephanie Deitrick, PhD
2012	David Nelson, MA
2011	Won Kyung Kim, PhD
2010	Yang Song, MA Angela Wills, MA Scott Brown, MA
2009	Darren Ruddell, PhD Jillian Elder, MA
2008	Jamie Patterson, MA Jason Howard, MA
2007	Colleen Garrity, PhD co-chair with Randall Cervený Shea Lemar, MA Andrew Burnett, MA
2004	Emily Atwood, MA
2003	Jennifer McCulley, GIS graduate certificate
2002	Sharolyn Anderson, PhD Karen Blevins, MA Seth Paine, MA
2001	Corene Matayas, MA, co-chair with Randall Cervený

Graduate Student Committee Member

In progress	Oscar Lopez, PhD Melissa Wagner, PhD, Matei Georgescu chair Jordan Smith, PhD, Billie Turner chair Rachel Beard, PhD, Biomedical Informatics, Matthew Scotch chair
2016	Lauren Gentile, PhD, Environmental Social Science, Bob Bolin chair
2015	Scott Kelley, PhD, Michael Kuby chair
2014	Jenna Nash, MUEP, Deirdre Pfeiffer Liyuan Liu, MUEP, Aaron Golub chair Jennifer Carlson, MA, Janet Franklin chair
2013	Myung-Hwa Hwang, PhD, Luc Anselin chair

January 2019

2012	Elyssa Gutbrod, PhD, Ronald Dorn chair Yin Liu, PhD, Alan Murray chair
2011	Melissa Wagner, MA, Randall Cervený and Soe Myint co-chairs Angelika Kizior, MUEP, Aaron Golub chair
2010	Brent Hedquist, PhD, Anthony Brazel chair Jong-Geun Kim, PhD, Michael Kuby chair
2009	Nayoung Ryu, MA, Breandan O hUallachain chair
2008	Robert Pahle, PhD Architecture, Feliz Ozel chair Sarah Boyle, PhD Biology, Andrew Smith chair Jason Kelley, MA, Michael Kuby chair Jared Underwood, PhD, Biology, Leah Gerber chair
2007	Carol Atkinson-Palombo, PhD, Patricia Gober chair Patrick Whelley, MA, Geological Sciences, Ronald Greeley chair Brenda Koerner, PhD Plant Biology, Jeff Klopatek chair Brandon Vogt, PhD, Robert Edsall chair Seow Lim, PhD, Michael Kuby chair
2005	Stephanie Dietrick, MA, Robert Edsall chair
2004	Timothy Leslie, MA, Breandan O hUallachain chair
2003	Jana Heisler, MS Plant Biology, John Briggs chair
2002	Sean Whitcom, MS Plant Biology, Jean Stutz chair Santiago Lopez, MS, Patricia Fall chair
2000	Antonio Matamoros, MA, Rodrigo Sierra chair Mary Richardson, MA, Interdisciplinary Studies, Andrew Smith chair Michael Henze, MA, Ronald Dorn chair Brandon Vogt, MA, Ronald Dorn chair
1999	Steven Gordon, PhD, Ronald Dorn chair Curtis Sommer, MA, Michael Kuby chair
1998	Jordon Chamberlain, MA, Rodrigo Sierra chair Charlene Howard McDonald, MA, Elizabeth Burns chair

Undergraduate Honor's Thesis Committee

2015	Jessica Jia, co-chair with Kelli Larson, honors thesis
2011	Joshua Randall, Community of Undergraduate Research Scholars (COURS) Michael Catsos, committee member, honors thesis Emma Harrison, committee member, honors thesis
2003	Robert Murray, chair, honors thesis

Memberships

2016 -	American Association for the Advancement of Science (AAAS)
2011 -	American Geophysical Union (AGU)
2010 -	American Planning Association (APA)
2007 -	American Society for Photogrammetry and Remote Sensing (ASPRS)

1998 - Association of Pacific Coast Geographers (APCG)
1997 – 2009 American Congress on Surveying and Mapping (ACSM)
1997 – 2009 Cartography and Geographic Information Science Society (CaGIS)
1993 - Association of American Geographers (AAG)

EXHIBIT X

Assessment of Race, Ethnicity, and Female Heads of Households in Public Housing in the City of Maricopa, Arizona

Report to Brancart & Brancart
Prepared by Elizabeth A. Wentz, PhD
January 31, 2018

I. Introduction

This report examines the distribution of race, ethnicity and gender in four populations groups.

1. Head of household receiving housing assistance administered by the Pinal County Housing Department (PCHD), also known as the Pinal County Housing Authority (PCHA), including the City of Maricopa, based on the US Department of Housing and Urban Development (HUD) data;
2. Head of household on the waiting list for housing assistance provided by PCHD, based on data from PCHD;
3. Head of household occupying public housing units located on Edwards Circle in the City of Maricopa operated by PCHD, based on data from PCHD; and,
4. Head of household for dwelling units receiving water service provided by the Maricopa Domestic Water Improvement District (MDWID), based on data produced by MDWID to Brancart & Brancart.

The analysis compares these data sets to determine if there is a disparity between the population distribution for MDWID and population distributions for PCHD recipients, households on the PCHD waiting list, and PCHD head of household occupying public housing located on Edwards Circle in the City of Maricopa. For each disparity identified, this report states whether that disparity is statistically significant, which provides a measure whether a disparity is the result of chance. The remainder of this report describes the City of Maricopa, the public housing buildings in the City of Maricopa, the data and methods of analysis used in the report, and an interpretation of the findings.

II. Data Sources

- US Census, accessed at <https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>;
- Residential Characteristics Report (RCR) compiled by HUD, accessed at <https://pic.hud.gov/pic/RCRPublic/rcrmain.asp>, and identified as HUD 7-12;
- PCHD data sets reflecting occupancy of dwellings, including public housing dwelling located on Edward Circle in the City of Maricopa, and households on waiting list for housing assistance, provided by Brancart & Brancart and identified as PCHD 1-36;
- MDWID data sets reflecting households receiving water service provided by MDWID, provided by Brancart & Brancart and identified as MDWID 1279-1292 and MDWID 1268-1274; and,
- Google Maps, as reflected in Figure 1 and 2 herein.

A. The City of Maricopa and Pinal County

The City of Maricopa is an incorporated area in Pinal County Arizona with a population (estimated 2016) of 43,462 (US Census). The total land area is 47.47 square miles. City water is serviced in part by the Maricopa Domestic Water Improvement District (MDWID). Summary statistics for the City of Maricopa and Pinal County are shown in Table 1. Both the City of Maricopa and Pinal County are largely white (more than 70%) with very few single female heads of households (approximately 7% of all households).

Table 1. Population statistics for Pinal County and the City of Maricopa, Arizona (US Census 2010)

Geographic area	Total population	White (non Hispanic)	African American	American Indian**	Hispanic	Total # Households	Female HH w/children
Pinal County	375770	272,013 (72.39%)	17,215 (4.58%)	20,949 (5.57%)	106,997 (28.47%)	125,590	8462 (6.74%)
City of Maricopa	43462	30,528 (70.24%)	4206 (9.68%)	863 (1.99%)	10,617 (24.43%)	14,359	1011 (7.04%)

** Includes Alaskan natives

B. Pinal County Housing Department (PCHD)

The US Department of Housing and Urban Development (HUD) maintains records on both current housing occupancy and applications currently on the waitlist. Table 2 below reports the racial/ethnic distribution from these two populations. The "50058 rec" refers to a form that HUD uses to collect data from the participants of the subsidized housing program. Source: HUD Resident Characteristics Report, 2017 (HUD 7-12).

Table 2. Household statistics for the Pinal County Housing Authority AZ010

Population	50058 rec	White (non Hispanic)	African American	American Indian**	Hispanic	Female HH w/children
PCHD (AZ010)	155	97 (63%)	23 (15%)	28 (18%)	73 (47%)	126 (73%)
PCHD waitlist	5571	2945 (53%)	727 (13%)	485 (8.8%)	1320 (23.7%)	NA

** Includes Alaskan natives

C. Edwards Circle: Public Housing in the City of Maricopa

The public housing examined in this report consists of 10 building structures located on Edwards Circle in the City of Maricopa, Arizona. Each building contains two dwelling units (Figure 1 and 2). Current records from 2017 (PCHD pgs 21-32) indicate that 18 of the 20 units are occupied. There are 77 residents with 48 of them being minors (under 18). Summary statistics of the households and population are reported in Table 3.

Table 3. Population and household statistics for the residents in Edwards Circle

Total population*	Total # Households	Female HH w/children	White Non Hispanic	African American	American Indian**	Hispanic
77			9 (11.69%)	33 (42.86%)	10 (12.99%)	24 (31.17%)
	18	16 (89%)	2 (11.1%)	7 (38.9%)	3 (16.7)	6 (33.3%)

* Sum of racial/ethnic population does not sum to 77 because race/ethnicity of 1 resident is unreported

** Includes Alaskan natives



Figure 1 shows a bird's eye view of the 10 structures. (source Google maps)



Figure 2 shows a street view of two of the structures showing entrances to the two units (source Google maps)

D. Maricopa Domestic Water Improvement District (MDWID): Heads of households receiving water service

Two data sets reflect the distribution by race, ethnicity, and gender for heads of households that receive water service from MDWID (MDWID 1279-1292 and MDWID 1268-1274). These data provide information based on race, ethnicity and gender only. These data reflect the following distribution of heads of households based on those demographic characteristics.

Table 4. Descriptive statistics on the household heads in the MDWID

Number of units	White Non Hispanic	African American	American Indian**	Hispanic	Female HH w/children
312	140	9	7	155	107
	(45%)	(2.9%)	(2.24%)	(49.7%)	(34.3%)

** Includes Alaskan natives

The geographic boundary of the service area for MDWID with the boundary of the City of Maricopa and the location of the Edwards Circle homes is shown in Figure 3.



Figure 3. Shows the geographic relationship between the Edwards Circle PHB, the MDWID service area, the City of Maricopa all within Pinal County

III. Analysis

Analytical approach is to calculate the difference in percentages on subpopulations and assess statistically whether these differences occurred by chance. The probability of the difference occurring by chance is reported through a p-value where values less than 0.01 are considered significant. In other words, small p values mean that the difference in percentage did not occur by chance. Each section below describes the analysis based on a specific subpopulation.

A. Race

To examine whether there are statistical racial differences between residents in Edwards Circle and other comparable subpopulations, the chi-square test is used. Table 5 compares the household percentages of household heads in the Edwards Circle housing to the household heads in the Pinal County Housing Department, the Pinal County Housing Department waitlist, and the households receiving water delivery from the MDWID. Values shown are the percentage difference and the level of confidence in parentheses.

Cells in the table shown in red indicate that the Edwards Circle percentage of that racial group is statistically different from the other subpopulation.

Table 5. Chi-squared test comparing Edwards Circle households (Table 3) to comparative groups on race. Red indicates the % difference is statistically significance at the 0.01 level.

	White (non Hispanic)	African American	American Indian
Pinal County HA	55% (P<0.0001)	23% (P=0.0174)	3% (P=0.7626)
Pinal County HA waitlist	42% (P=0.0004)	26% (P=0.0011)	8.3% (P=0.2129)
MDWID participants	34% (P=0.0047)	36.1% (P<0.0001)	14.76% (P=0.0004)

The results show that the percentage of White (non Hispanic) in Edwards Circle are between 34% and 55% lower than the other groups compared here. For the African Americans, there is between a 23% and 36% percentage difference with Edwards Circle having a statistically higher percentage, with the difference for Pinal County HA having 2% probability that this could have occurred by chance. The American Indian population in Edwards Circle looks more like the Pinal County HA and the waitlist with differences only at 3% and 8.3%. However, there is a statistical difference for American Indians in the MDWID resident group by nearly 15% with a high probability that this did not occur by chance. Across all racial groups, the Edwards Circle heads of household are statistically different from the MDWID heads of household.

A similar test is performed by comparing the total population to the subpopulations in the City of Maricopa and Pinal County. The total population includes the heads of households plus all other household residents including minors and other adults. Table 6 shows these comparisons.

Table 6. Chi-squared test comparing Edwards Circle (Table 3) to comparative populations on race. Red indicates the % difference is statistically significance at the 0.01 level.

	White (non Hispanic)	African American	American Indian
Pinal County (total)	60.7% (P<0.0001)	38.28% (P<0.0001)	7.42% (P=0.0045)
City of Maricopa (total)	58.55% (P<0.0001)	33.42 (P<0.0001)	11% (P<0.0001)

The racial differences between the total resident population compared to the populations of Pinal County and the City of Maricopa are even greater than the households. What this means is that the subpopulation of Edwards Circle drawn from the City of Maricopa and Pinal County is not statistically similar and therefore did not occur by chance.

B. Ethnicity

To examine whether there are statistical ethnicity differences between residents in Edwards Circle and other comparable subpopulations, the chi-square test is used as before. In Table 7, the ethnicity of the household head is compared to other population groups.

Table 7. Chi-squared test comparing Edwards Circle households (Table 3) to comparative groups on ethnicity. Red indicates the % difference is statistically significance at the 0.01 level.

	Hispanic (non White only)
Pinal County HA	12% (P=0.3327)
Pinal County HA waitlist	9.3% (P=0.3545)
MDWID participants	16.7% (P=0.1688)

The results show that while there are percentage differences between households heads who are Hispanic, but these differences are not statistically significant.

A similar analysis is performed comparing the ethnicity of the total population in Edwards Circle to the ethnicity of the total population in Pinal County and the City of Maricopa. The results are shown in Table 8 revealing that there is little difference in the percentage of Hispanics in the City of Maricopa and Pinal County compared to the population in Edwards Circle.

Table 8. Chi-squared test comparing Edwards Circle population (Table 3) to comparative groups on ethnicity. Red indicates the % difference is statistically significance at the 0.01 level.

	Hispanic (non White only)
Pinal County (total)	2.7% (P=0.5996)
City of Maricopa (total)	6.74% (P=0.1691)

C. Gender

The final population group compared in this analysis is female heads of household who are single with dependent children. The comparison is conducted for all population groups. The results are shown below in Table 9.

Table 9. Chi-squared test comparing Edwards Circle households (Table 3) to comparative groups on female heads of households. Red indicates the % difference is statistically significance at the 0.01 level.

	Female HH with children
Pinal County HD	16% (P=0.1407)
Pinal County HD waitlist	NA
MDWID participants	54.7% (P<0.0001)
Pinal County (households)	82.26% (P<0.0001)
City of Maricopa (households)	81.96% (P<0.0001)

The Pinal County HA has 16% fewer female HH with children compared to Edwards Circle but this difference is not statistically significant. However, the difference between Edwards Circle and the MDWID households is nearly 55% with a high probability of not occurring by chance. The differences in percentages to the larger population in the City of Maricopa and Pinal County are even greater at approximately 82% difference for both with a high probability that this difference did not occur by chance.

IV. Interpretation of Results and Opinions

In the analysis comparing the households in Edwards Circle serviced by MDWID compared to other MDWID participants, Pinal PHA households, and those on PHA waitlist, the Edwards Circle PHA is statistically more likely to have African American and American Indian heads of households. What this means that even in cases of housing needs, the residents of Edwards Circle are more likely to come from minority racial groups. Furthermore, there is a statistically significant chance that those heads of households will be single and female. There is not a statistical difference between Edwards Circle PHD and other groups on ethnicity. In other words, the percentage difference of those Hispanic in Edwards Circle and Pinal County PHA, MDWID, Pinal County, and the City of Maricopa are similar.

V. Other Information

A. Qualifications

My qualifications, including a list of all publications authored in the previous ten years, are set forth in the curriculum vitae attached as Exhibit 1.

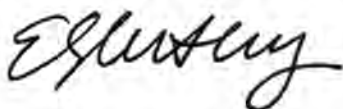
B. Other Testimony

I have not testified as an expert at trial or by deposition during the previous four years.

C. Compensation

In addition to reasonable costs and expenses incurred, my compensation is \$300 per hour for providing testimony in deposition or at trial and \$150 per hour for research and writing. I charge \$75 per hour for any necessary research assistance.

Dated: January 31, 2018



Elizabeth A. Wentz, PhD

EXHIBIT Y

Jeffrey C. Matura, State Bar No. 019893
Melissa J. England, State Bar No. 022783
Barrett & Matura, P.C.
8925 E. Pima Center Parkway, Suite 100
Scottsdale, AZ 85258
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Attorneys for Defendant Maricopa Domestic Water
Improvement District

UNITED STATES DISTRICT COURT

DISTRICT OF ARIZONA

Southwest Fair Housing Council, Inc., an
Arizona nonprofit corporation; Tavita Pena;
and Jennifer Peters,

Plaintiffs,

v.

Maricopa Domestic Water Improvement
District, an Arizona municipal corporation;
and Pinal County, an Arizona County,

Defendants.

Case No. CV-17-1743-PHX-JJT

**MARICOPA DOMESTIC WATER
IMPROVEMENT DISTRICT'S
RESPONSE TO PLAINTIFFS'
FIRST SET OF
INTERROGATORIES BY SWFHC
(NOS. 1-20)**

Pursuant to Rule 33 of the Federal Rule of Civil Procedure, Defendant Maricopa Domestic Water Improvement District responds to Plaintiffs' First Set of Interrogatories By SWFHC (interrogatories 1-20) as follows:

1. Please list by full name, job title or description, dates of employment or service, nature of service, employment or engagement, and current address, email and telephone number, each officer, director, or employee who was engaged in the operation or management of defendant Maricopa Domestic Water Improvement District (MDWID) at any time since January 1, 2013.

Response: Objection to this interrogatory to the extent it seeks any personally identifying information such as address, email and telephone numbers for officers,

Production, number 27.

9. If MDWID denies or refutes the allegation that the MDWID deposit policy for Pinal County Public Housing residents has a discriminatory effect on the basis of race, specifically African Americans, then please state each reason that supports such denial or refutation.

Response: MDWID objects to this interrogatory as overly broad and unduly burdensome. Contention interrogatories “that systematically track all of the allegations in an opposing party's pleadings, and that ask for each and every fact and application of law to a fact that supports the party's allegations, are an abuse of the discovery process because they are overly broad and unduly burdensome.” *United States v. JP Morgan Chase Bank*, No. CV12-0155-PHX-MHB, 2013 WL 12204174, at *2 (D. Ariz. Sept. 16, 2013). Further, while contention interrogatories may be used, they “should not require a party to provide the equivalent of a narrative account of its case, including every evidentiary fact, details of testimony of supporting witnesses, and the contents of supporting documents.” *See Milke v. City of Phoenix*, 2016 WL 5346364 (D. Arizona 2016) quoting *Aldapa v. Fowler Packing Co. Inc.*, 310 F.R.D. 583, 591 (E.D. Cal. 2015). Moreover, it is Plaintiffs’ burden to establish a discriminatory effect and not MDWID’s burden to prove the opposite.

Subject to and without waiving these objections, MDWID responds that it may employ an expert to examine and opine regarding Plaintiffs’ alleged discriminatory effects. Further, Plaintiffs have not established that they are similarly situated to all the residents of Maricopa or that there is a causal connection between the policy and the alleged disbalance. “Racial imbalance ... does not, without more, establish a prima facie case of disparate impact.” *Wards Cove Packing Co. v. Atonio*, 490 U.S. 642, 653, 109 S. Ct. 2115, 104 L.Ed.2d. 733 (1989). Nevertheless, even if the deposit policy had a discriminatory effect, MDWID had a legitimate nondiscriminatory reason for the policy. MDWID is a small nonprofit corporation that provides water service to individuals and business organizations in and around

1 **Maricopa, Arizona. Most of these individuals and businesses pay taxes that**
2 **contribute to the operating expenses of the District. Pinal County Housing property**
3 **is Out of District. Pinal County and its residents do not pay property taxes to**
4 **contribute to the operation of the District. Moreover, when individuals leave Pinal**
5 **County Housing with delinquent accounts or open balances, MDWID has no viable**
6 **recourse to collect those losses. Unlike other situations where MDWID can put a lien**
7 **on a property to collect a balance from a homeowner, MDWID is prohibited from**
8 **attaching a lien on property owned by Pinal County. Accordingly, the deposit policy**
9 **was necessary to protect against the losses suffered by MDWID from delinquent and**
10 **open accounts that would go unpaid. MDWID has a legitimate interest in collecting**
11 **sufficient funds to operate the water system and provide services. Further, there is**
12 **no intent or motive by MDWID to discriminate and Pinal County Housing residents**
13 **were not treated differently that similarly situated parties who are not members of a**
14 **protected class.**

1 ORIGINAL of the foregoing mailed
2 and e-mailed on April 24, 2019 to:

3 Christopher Brancart
4 Brancart & Brancart
5 P.O. Box 686
6 Pescardero, California 94060
7 Attorneys for Plaintiffs

8 Paul Gattone
9 Law Office of Paul Gattone
10 301 South Convent Avenue
11 Tucson, Arizona 85701
12 Attorneys for Plaintiffs

13 Georgia A. Staton
14 Jones, Skelton & Hochuli, P.L.C.
15 40 North Central Avenue, Suite 2700
16 Phoenix, Arizona 85004
17 Attorneys for Pinal County

18 /s/ Carolyn Harrington
19 4812-7110-4078
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EXHIBIT Z

Redacted

Maricopa - Maricopa DWID

Date: 01/28/2016 7:41 AM

Title: Customer Account: 2130-06-SM

Account No: 2130-06-SM

Location:

44984 W EDWARDS CIR 6

Attn:

Name:

Address:

Address:

City:

CASA GRANDE

State Zip: AZ 85122

LANGUAGE

W
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O

Date	Period	Ref	Paid Ref	Current	Previous	Usage	Meter	Description	Tier	Amount
8/01/2012		0						Previous Balance		30.71
8/13/2012	1202		CASH					Payment #:10013500		-60.00
8/31/2012	1203	120654		220,637.00	208,471.00	12,166.00	01-2130-06	Monthly Service		47.12
8/31/2012		120654						Tax		4.57
9/26/2012	1203	120747				1.00		RECNNCT FEE		55.00
9/28/2012	1204	C10959				-1.00		Zero Reconn.		-55.00
9/28/2012	1204	121035		228,323.00	220,637.00	7,686.00	01-2130-06	Monthly Service - Prorated for 24 Days		17.60
9/28/2012		121035						Tax		1.71
Account Balance										\$41.71

Maricopa - Maricopa DWID

Title: Customer Account: 2130-14-EB

Date: 01/28/2016 7:43 AM

Account No: 2130-14-EB

Location: 45022 W EDWARDS CIR 14

Attn:

Name:

Address:

Address:

City:

MARICOPA

State Zip: AZ 85139-0259

LANGUAGE

Date	Period	Ref	Paid Ref	Current	Previous	Usage	Meter	Description	Tier	Amount
1/01/2011		0						Previous Balance		26.53
1/17/2011	1007	114328				1.00		Svc/Disc.Fee		55.00
1/31/2011	1008	114550		5,232.00	4,334.00	898.00	01-2130-14	Monthly Service		22.00
1/31/2011		114550						Tax		2.13
2/28/2011	1009	114777		5,232.00	5,232.00		01-2130-14	Monthly Service		22.00
2/28/2011		114777						Tax		2.13
5/03/2011	1011	C10691				-1.00		Billing error credited for inactive account.		-24.13
Account Balance										\$105.66

Redacted

Maricopa - Maricopa DWID

Date: 01/28/2016 7:45 AM

Title: Customer Account: 2130-14-RC

Account No: 2130-14-RC

Location:

45022 W EDWARDS CIRCLE 14

Attn:

Name:

Address:

Address:

City:

MARICOPA

State Zip: AZ 85138

LANGUAGE

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Date	Period	Ref	Paid Ref	Current	Previous	Usage	Meter	Description	Tier	Amount
8/01/2012		0						Previous Balance		1.33
8/31/2012	1203	120661		217,317.00	210,033.00	7,284.00	01-2130-14	Monthly Service		36.14
8/31/2012		120661						Tax		3.51
9/26/2012	1203	120746				1.00		RECNNCT FEE		55.00
9/28/2012	1204	C10958				-1.00		0 RECNNCT		-55.00
9/28/2012	1204	121032		225,747.00	217,317.00	8,430.00	01-2130-14	Monthly Service - Prorated for 25 Days		35.05
9/28/2012		121032						Tax		3.40
Account Balance										\$79.43

Redacted

Maricopa - Maricopa DWID

Title: Customer Account: 2130-10-VL

Date: 01/28/2016 7:45 AM

Account No: 2130-10-VL

Location:

45006 W Edwards Cir 10

Attn:

Name:

W

Address:

ST

Address:

LANGUAGE

City: Bapchule State Zip: AZ 85121

Date	Period	Ref	Paid Ref	Current	Previous	Usage	Meter	Description	Tier	Amount
8/01/2015		0						Previous Balance		.68
8/17/2015	1602		cash					Payment #:10023201		-31.27
8/31/2015		131774						First 1000 Units at 0.0000000	1.00	
								Plus 1.00		
8/31/2015		131774						Plus 951 Units at 0.0000900	.09	
8/31/2015	1603	131774		382,307.00	380,356.00	1,951.00	01-2130-10	Res. Water Surcharge		1.09
8/31/2015		131774						First 1000 Units at 0.0000000	25.00	
								Plus 25.00		
8/31/2015		131774						Plus 951 Units at 0.0022500	2.14	
8/31/2015	1603	131774		382,307.00	380,356.00	1,951.00	01-2130-10	Monthly Service		27.14
8/31/2015		131774						Tax		2.36
9/30/2015	1604	132101		382,325.00	382,307.00	18.00	01-2130-10	Res. Water Surcharge		1.00
9/30/2015	1604	132101		382,325.00	382,307.00	18.00	01-2130-10	Monthly Service		25.00
9/30/2015		132101						Tax		2.17
								Account Balance		\$28.17

Maricopa - Maricopa DWID

Title: Customer Account: 2130-15-MT

Date: 01/28/2016 7:46 AM

Account No: 2130-15-MT

Location:

45005 W Edwards Cir 15

Attn:

Name:

Address:

Address:

City:

Maricopa

State Zip:

AZ 85139

LANGUAGE

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Date	Period	Ref	Paid Ref	Current	Previous	Usage	Meter	Description	Tier	Amount
12/01/2010		0						Previous Balance		80.49
12/01/2010	1006	113911		153,089.00	152,834.00	2,550.00	01-2130-15	Monthly Service		25.49
12/01/2010		113911						Tax		2.47
12/29/2010	1007	114226		26,106.00	26,106.00		01-2130-15	Monthly Service		22.00
12/29/2010		114226						Tax		2.13
1/31/2011	1008	114551		27,872.00	26,106.00	1,766.00	01-2130-15	Monthly Service		23.72
1/31/2011		114551						Tax		2.30
2/28/2011	1009	114778		29,566.00	27,872.00	1,694.00	01-2130-15	Monthly Service		23.56
2/28/2011		114778						Tax		2.29

Account Balance

\$184.45

Maricopa - Maricopa DWID

Date: 01/28/2016 7:48 AM

Title: Customer Account: 2130-10

Account No: 2130-10 Location: 45006 W EDWARDS CIR 10
 Attn: Pinal County Housing Division W
 Name: 970 N Eleven Mile Corner ST
 Address: LANGUAGE O
 Address: Casa Grande State Zip: AZ 85222
 City:

Date	Period	Ref	Paid Ref	Current	Previous	Usage	Meter	Description	Tier	Amount	
3/01/2015		0						Previous Balance			
4/30/2015	1511	130572		374,049.00	373,719.00	330.00	01-2130-10	Res. Water Surcharge		.88	
4/30/2015	1511	130572		374,049.00	373,719.00	330.00	01-2130-10	Monthly Service		22.00	
4/30/2015		130572						Tax		1.91	
									Account Balance		\$24.79

Maricopa - Maricopa DWID

Title: Customer Account: 2130-11

Date: 01/28/2016 7:49 AM

Account No: 2130-11 Location: 44983 W EDWARDS CIR 11
 Attn: PINAL COUNTY HOUSING DIV W
 Name: STX
 Address: 970 N 11 MILE CORNER RD
 Address: LANGUAGE O
 City: CASA GRANDE State Zip: AZ 85194

Date	Period	Ref	Paid Ref	Current	Previous	Usage	Meter	Description	Tier	Amount
9/01/2014		0						Previous Balance		
9/30/2014	1504	128484		79,018.00	78,861.00	157.00	01-2130-11	Res. Water Surcharge		.88
9/30/2014	1504	128484		79,018.00	78,861.00	157.00	01-2130-11	Monthly Service		22.00
9/30/2014		128484						Tax		1.91
Account Balance										\$24.79

Maricopa - Maricopa DWID

Title: Customer Account: 2130-13

Date: 01/28/2016 8:02 AM

Account No: 2130-13 Location: 45005 W Edwards Cir 13
 Attn: Pinal County Housing Dept W
 Name: 970 N. 11 Mile Corner Rd STX
 Address: LANGUAGE O
 Address: City: Casa Grande State Zip: AZ 85194

Date	Period	Ref	Paid Ref	Current	Previous	Usage	Meter	Description	Tier	Amount
5/01/2015		0						Previous Balance		
5/31/2015	1512	130867		153,135.00	153,130.00	5.00	01-2130-13	Res. Water Surcharge		.88
5/31/2015	1512	130867		153,135.00	153,130.00	5.00	01-2130-13	Monthly Service		22.00
5/31/2015		130867						Tax		1.91
Account Balance										\$24.79